# Notice of Extraordinary General Meeting

Imugene Limited ACN 009 179 551

**THE INDEPENDENT EXPERT HAS DETERMINED THAT THE PROPOSED TRANSACTION IS FAIR AND REASONABLE TO THE NON-ASSOCIATED SHAREHOLDERS**.

# Notice of Extraordinary General Meeting

## Imugene Limited ACN 009 179 551

Notice is given that an extraordinary general meeting of Imugene Limited (**Company**) will be held at:

| | |
|---|---|
| **Location** | Level 3, 62 Lygon Street, Carlton, Victoria, Australia 3053 |
| **Date** | 18 November 2019 |
| **Time** | 10.00 am (Melbourne time - AEST)<br>Registration from 9:45 am (Melbourne time – AEST) |

## Special Business

### Resolution 1 – Approval of allotment and issue of Consideration Shares to unrelated Vaxinia Shareholders

To consider and, if in favour, pass the following resolution as an ordinary resolution:

1 *'That, subject to shareholders approving resolutions 2 and 3, for the purposes of ASX Listing Rule 7.1 and for all other purposes, shareholders approve the issue of up to 107,031,451 Consideration Shares at an issue price of $0.0155 per share to unrelated Vaxinia Shareholders as detailed in the Explanatory Memorandum.'*

**Voting Exclusion**

The Company will disregard any votes cast in favour of this resolution by or on behalf of any person who is expected to participate in, or who will obtain a material benefit as a result of, the proposed issue (except a benefit solely by reason of being a holder of ordinary securities in the Company) or an associate of those persons.

However, the Company will not disregard a vote if:

(a) it is cast by a person as proxy for a person who is entitled to vote, in accordance with the directions on the proxy form; or

(b) it is cast by the person chairing the meeting as proxy for a person who is entitled to vote, in accordance with a direction.

### Resolution 2 – Approval of allotment and issue of Consideration Shares to related parties: Paul Hopper and persons and entities related to him

To consider and, if in favour, to pass the following resolution as an ordinary resolution:

2 *'That, subject to shareholders approving resolutions 1 and 3, for the purposes of ASX Listing Rule 10.11, section 208 of the Corporations Act and for all other purposes, the Company be authorised to issue up to 423,769,354 Consideration Shares at an issue price of $0.0155 per share to Mr Paul Hopper, a related party of the Company by virtue of him being a Director of Imugene, and persons and entities related to him, on the terms and conditions set out in the Explanatory Memorandum.'*

Note: If approval is obtained under Listing Rule 10.11, approval is not required under Listing Rule 7.1, as set out in the Explanatory Memorandum.

**Voting Exclusion**

The Company will disregard any votes cast in favour of this resolution by or on behalf of a person who is to receive securities in relation to the Company or an associate of that person.

However, the Company will not disregard a vote if:

(a) it is cast by a person as proxy for a person who is entitled to vote, in accordance with the directions on the proxy form; or

(b) it is cast by the person chairing the meeting as proxy for a person who is entitled to vote, in accordance with a direction.

The Company will also disregard any votes cast on resolution 2 by:

(a) a related party of the Company to whom the resolution would permit a financial benefit to be given; and

(b) any associate of such a related party,

in contravention of section 224 Corporations Act. However, the Company need not disregard a vote cast on resolution 2 if:

(c) it is cast by the person as a proxy appointed in writing that specifies how the proxy is to vote on the proposed resolution; and

(d) it is not cast on behalf of a related party or an associate of a related party of the Company to whom the resolution would permit a financial benefit to be given or any associate of such a related party.

## Resolution 3 – Approval of acquisition of Vaxinia Pty Ltd, a related party of Imugene

To consider and, if in favour, pass the following resolution as an ordinary resolution:

3 *'That, subject to shareholders approving resolutions 1 and 2, for the purposes of Listing Rule 10.1 and for all other purposes, approval is given for the Company to proceed with the Proposed Transaction, which includes the Company acquiring all of the shares in Vaxinia Pty Ltd, on the terms and conditions set out in the Explanatory Memorandum.'*

**Notes**: Further information in relation to this resolution appears in the Explanatory Memorandum.

For the purpose of Listing Rule 10.1, an Independent Expert's Report prepared by PKF Melbourne Corporate Pty Ltd is included in the Annexure to this Notice of Meeting. The Independent Expert has concluded that the Proposed Transaction is fair and reasonable to the Non-Associated Shareholders.

Further details regarding the Proposed Transaction and conclusion of the Independent Expert are set out in the Independent Expert's Report and in the accompanying Explanatory Memorandum. The Non-Interested Directors recommend that Shareholders read the Explanatory Memorandum and Independent Expert's Report in full before making any decision on how to vote on Resolution 3. If Shareholders have any queries regarding the Proposed Transaction or how to vote on Resolution 3, they should contact their professional adviser.

A copy of this Notice of Meeting as been provided to ASX and ASIC. Neither ASIC nor ASX or either of their officers take no responsibility for the contents of the Explanatory Memorandum.

**Voting Exclusion**

The Company will disregard any votes cast in favour of this resolution by or on behalf of a party to the transaction or any association of those persons.

However, the Company will not disregard a vote if:

(a) it is cast by a person as proxy for a person who is entitled to vote, in accordance with the directions on the proxy form; or

(b) it is cast by the person chairing the meeting as proxy for a person who is entitled to vote, in accordance with a direction

Dated: 11 October 2019
By order of the Board

**Phillip Hains**
**Company Secretary**

Notes

(a) Terms used in this Notice of Meeting which are defined in the Explanatory Memorandum have the meaning given to them in the Explanatory Memorandum.

(b) Subject to the Corporations Act, a member who is entitled to attend and cast a vote at the meeting is entitled to appoint a proxy.

(c) The proxy need not be a member of the Company. A member who is entitled to cast two or more votes may appoint two proxies and may specify the proportion or number of votes each proxy is appointed to exercise.

(d) If you wish to appoint a proxy and are entitled to do so, then complete and return the **attached** proxy form by 10.00am (AEST) on 16 November 2019.

(e) A corporation may elect to appoint a representative in accordance with the *Corporations Act 2001* (Cth) in which case the Company will require written proof of the representative's appointment which must be lodged with or presented to the Company before the meeting.

(f) The Company has determined under regulation 7.11.37 *Corporations Regulations 2001* (Cth) that for the purpose of voting at the meeting or adjourned meeting, Shares are taken to be held by those persons recorded in the Company's register of shareholders as at 7.00pm (AEST) on 16 November 2019.

(g) If you have any queries on how to cast your votes then call the Company's registered office on +61 3 9824 5254 during business hours.

# Explanatory memorandum

## Imugene Limited ACN 009 179 551

This Explanatory Memorandum accompanies the notice of Extraordinary General Meeting of the Company to be held at Level 3, 62 Lygon Street, Carlton, Victoria, Australia 3053 on Monday, 18 November 2019 at 10.00am (AEST).

The Explanatory Memorandum has been prepared to assist Shareholders in determining how to vote on the resolutions set out in the Notice of Meeting and is intended to be read in conjunction with the Notice of Meeting.

## Background

1 On 15 July 2019, the Company announced that it would:

(a) acquire all of the shares held in Vaxinia Pty Ltd (**Vaxinia**); and

(b) separately acquire a worldwide exclusive licence to a promising oncolytic virus technology, known as CF33, developed at City of Hope, a world-renowned independent research and treatment centre for cancer, diabetes and other life-threatening diseases based in Los Angeles, California.

2 Completion of the acquisition of the shares in Vaxinia and the effectiveness of the licence agreement are conditional upon each other (as explained further below). They are, however, two individual transactions governed by two separately negotiated documents, being a licence agreement entered into between the Company and City of Hope (**Licence Agreement**), and a separate share sale agreement entered into between the Company and each Vaxinia Shareholder (**Share Sale Agreement**).

**CF33 technology**

3 CF33 is a chimeric vaccinia poxvirus from the lab of Professor Yuman Fong, Chair of Surgery at City of Hope, and a noted expert in the oncolytic virus field. Oncolytic viruses (**OVs**) are designed to both selectively kill tumour cells and activate the immune system against cancer cells, with the potential to improve clinical response and survival. OVs have the potential to transform oncology by directly causing tumour cell death, and also by delivering a potent payload in a targeted fashion that activates the immune system.

4 A Phase 1 clinical trial in 30 patients with advanced solid tumours is expected to commence in 2020 across a number of US cancer centres.

5 Imugene has not previously been involved in OV technologies prior to entry into the Proposed Transaction. The CF33 technology is complementary to, but not in conflict with, Imugene's existing technology portfolio (being B-Cell Peptide Vaccines (**BCPV**)), which are two different cancer attacking technologies.

6 Imugene's existing technology portfolio is currently based exclusively on BCPV. In simple terms, this is a potentially next generation cancer therapy that seeks to harness a patient's B-cells to produce antibodies which will target cancer thus enabling patients in effect to combat their own cancer. When the peptides are given to the patient they 'instruct' B-cells to start making antibodies against cancer. The technology has been under development for over 20 years and is

yet to result in an FDA approved drug. Imugene is targeting gastric cancer in its current clinical trial.

7 OV therapy represents potentially another major breakthrough in cancer treatment; when injected into patients, an engineered virus selectively replicates in and kills cancer cells without harming the normal tissues. CF33 is potentially a next generation OV platform which in addition to physically disrupting cancer cells through virus replication, may also be able to carry anticancer "payloads" to target cancer cells. Hence the CF33 platform may be able to target cancer cells from two approaches.

**Vaxinia**

8 Imugene's opportunity to acquire the exclusive licence from City of Hope was facilitated through Vaxinia. Vaxinia is a company controlled by Mr Paul Hopper, a Director of Imugene. In addition to his part time involvement with Imugene, Mr Hopper operates a life science consulting business focussed on the acquisition of biotechnology assets from leading US & European medical institutions. Mr Hopper has had a personal business relationship with City of Hope since 2016.

9 Mr Hopper, through Vaxinia, initially identified the opportunity, conducted due diligence on the CF33 technology, negotiated licence terms with City of Hope and worked up several potential financing options for Vaxinia. The Company, through its Chief Executive Officer, Ms Leslie Chong, approached Mr Hopper and asked for the opportunity to compete in the acquisition of the CF33 technology with other interested parties, and that Vaxinia considers a potential offer from Imugene in preference to financing Vaxinia as a stand-alone company via an IPO or foreign venture capital investment.

10 In return for being able to evaluate and potentially compete in acquiring the technology, Imugene entered into a confidentiality and non-circumvention agreement with Vaxinia, preventing Imugene from contracting directly with City of Hope in relation to the licencing of the CF33 technology and enabling Imugene to gain access to a competitive transaction that was already significantly developed.

11 As a result of the above circumstances:

(a) Vaxinia's shareholders have agreed to relinquish the opportunity with City of Hope to Imugene; and

(b) Vaxinia has also agreed to waive the non-circumvention provisions contained within the agreement described in paragraph 10 above, thereby allowing Imugene to enter into the Licence Agreement directly with City of Hope,

in consideration for receiving shares in Imugene pursuant to the Share Sale Agreement (and in exchange for their Vaxinia shares).

12 Vaxinia was incorporated in December 2018 for the purpose of securing the right to develop and commercialise CF33. It has not conducted any significant business activities since its incorporation. Vaxinia does not currently own an interest or otherwise have any legal right to the CF33 technology. The value of Vaxinia principally derives from the due diligence work conducted by Mr Hopper on the CF33 technology, the assembly of an expert team to develop CF33, the sourcing of several funding sources, the preliminary identification and negotiation of the licencing arrangements with City of Hope, and the introduction of Imugene to City of Hope.

**Establishment of independent committee**

13 When Imugene sought to pursue the opportunity with City of Hope, an independent committee was established by it (**Independent Committee**) to assess and pursue the licensing

opportunity on behalf of Imugene. This committee was chaired by non-executive director, Mr Charlie Walker, and comprised the Company's Chief Executive Officer and Managing Director, Ms Leslie Chong, the company's chief medical officer, Dr Mark Marino, Dr Lesley Russell and Dr Jens Ekstein (both newly appointed directors).

14 The Independent Committee did not include Mr Hopper due to his pre-existing relationship with City of Hope and Vaxinia. Dr Axel Hoos also requested to be recused from forming part of the independent committee given his roles with various other life science companies. Mr Hopper and Dr Hoos have also refrained from making a recommendation in relation to the resolutions included in this Notice of Meeting.

15 As part of Imugene's due diligence of the Proposed Transaction, Dr Yuman Fong presented to the Independent Committee on the CF33 technology and the Independent Committee also engaged in other due diligence activities including discussions with third party OV experts and a review by the Company's chief scientific officer.

16 The Independent Committee also commissioned the Independent Expert's Report to opine on the value being delivered to Imugene's shareholders as well as the overall fairness and reasonableness of the Proposed Transaction.

**Licence agreement**

17 Under the terms of the Licence Agreement, Imugene will acquire the exclusive world-wide rights to develop and commercialize the CF33 OV in the field of oncology (other than treatments that involve cell therapy). CF33 OV is akin to a platform technology since different constructs can be added onto the viral DNA.

18 The CF33 OV is the subject of a patent application which entered national phase in in certain jurisdictions in February 2019 and in certain other jurisdictions in March 2019. The term of the patent is scheduled to expire in 2037.

19 Under the Licence Agreement, Imugene is required to comply with development, including clinical development and diligence obligations which Imugene considers to be consistent with industry practice.

20 In consideration for the grant of the exclusive licence, Imugene has agreed to pay City of Hope licence fees comprising an upfront payment, annual maintenance fees which are creditable against future royalty payments, performance based consideration linked to the achievement of certain value-inflection development milestones and commercial outcomes, as well as net sales based royalty payments, and sublicencing fees. All upfront cash payments will be funded through Imugene's existing cash reserves.

21 The development milestones comprise, dosing the first patient in each of a Phase I clinical trial, a Phase II clinical trial and a Phase III clinical trial respectively as well as attaining marketing approval in the United States and any one of Europe, Japan, China, Canada, South Korea, Australia, or the United Kingdom.

22 A summary of the key terms of the Licence Agreement is set out in the Independent Expert's Report annexed to this Notice of Meeting.

**Share Sale Agreement**

23 As part of the overall transaction, Imugene has also entered into a binding Share Sale Agreement to acquire 100% of the shares held in Vaxinia.

24 Subject to shareholder approval being obtained at this General Meeting, the completion date under the Share Sale Agreement on is expected to occur shortly after this General Meeting.

25 A summary of the key terms of the Share Sale Agreement is set out below:

<table>
<tr><th>Term</th><th>Details</th></tr>
<tr><td>Conditionality</td><td>Completion of the Share Sale Agreement is subject to:<br>(a) the Company obtaining the approval of its shareholders, ASIC or ASX (as applicable) for:<br>(i) the purchase of the shares in Vaxinia on the terms set out in the agreement; and<br>(ii) any other matter the Company reasonably considers necessary under the terms of the agreement;<br>(b) the Licence Agreement becoming unconditional; and<br>(c) there having been no material adverse change to the business, financial or trading position, or assets, liabilities or profitability of Vaxinia that results in:<br>(i) an event that materially affects the business; or<br>(ii) a warranty being materially untrue, incomplete, inaccurate or misleading or deceptive.</td></tr>
<tr><td>Purchase Price</td><td>The total purchase price of the shares in Vaxinia is an amount of up to $8,325,000 (subject to certain milestones having been achieved which are described further below).</td></tr>
<tr><td>Value of Consideration Shares</td><td>All Consideration Shares issuable under the agreement have an issue price of $0.0155, which is equal to the seven day volume weighted average price of Imugene Shares prior to the announcement of the parties entering into the agreement on 15 July 2019.</td></tr>
<tr><td>Upfront consideration</td><td>The upfront consideration payable to the Vaxinia Shareholders under the agreement comprises:<br>(a) 127,994,355 Consideration Shares at an issue price of $0.0155 per Consideration Share; and<br>(b) $97,587.50 cash consideration payable to the Vaxinia Shareholders who are not related parties of the Company.</td></tr>
<tr><td>Deferred consideration</td><td>There deferred consideration is subject to the achievement of certain milestones relating to the development of CF33 as follows:
<table>
<tr><th>Milestone</th><th>Description</th><th>Consideration Shares</th></tr>
<tr><td>1</td><td>Allowance of investigational new drug by the US Food and Drug Administration in relation to CF33</td><td>119,354,838 Consideration Shares</td></tr>
<tr><td>2</td><td>Dosing of first patient in a Phase 1 clinical trial for CF33</td><td>134,258,064 Consideration Shares</td></tr>
<tr><td>3</td><td>Meeting Phase 1 safety endpoints excluding efficacy and dose</td><td>149,193,548 Consideration Shares</td></tr>
</table></td></tr>
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| | |
|---|---|
| | The milestones relate to the development of the CF33 technology. The Vaxinia Shareholders are not responsible for the achievement of the milestones under the Share Sale Agreement.<br><br>The satisfaction of each milestone shall be at the sole determination of Imugene (acting reasonably). If a milestone is not achieved, the Vaxinia Shareholders shall not be entitled to any Consideration Shares in respect of that milestone.<br>If either of the following events occur, then all milestones will be treated as having been achieved and the applicable Consideration Shares for the milestone(s) shall become immediately issuable:<br>(a) change of control occurs in Imugene, or<br>(b) Imugene merges or divests the CF33 technology.<br><br>Imugene shall not be required to issue any Consideration Shares if doing so would cause it to breach any applicable law, including Chapter 6 Corporations Act, but Imugene shall work in good faith with the Vaxinia Shareholders to seek the required approvals to enable the issuance of the Consideration Shares to occur as soon as practicable after the Vaxinia Shareholders become entitled to them. |
| **Escrow** | All Consideration Shares:<br>(a) issued to Vaxinia Shareholders who are not related parties of the Company will be subject to voluntary escrow for a period of six months from the date of issue; and<br>(b) issued to Vaxinia Shareholders who are related parties of the Company will be subject to voluntary escrow for a period of twelve months from the date of issue.<br>All Consideration Shares issued under the agreement shall otherwise rank equally with existing Imugene Shares. |
| **Vaxinia Shareholder warranties and indemnities** | The agreement includes a of number of warranties given in favour of the Company by each Vaxinia Shareholder in respect of the ownership of their Vaxinia shares and their ability to sell them to the Company. The Vaxinia Shareholders each indemnify the Company for loss it may suffer if any of the warranties relating to them and their shares are breached.<br>The agreement also includes a number of warranties given in favour of the Company by Paul Hopper in relation to the business operations and history of Vaxinia. Paul Hopper also indemnifies the Company for loss it incurs as a result of any breach of those warranties. The quantum of this liability is capped at the purchase price. |
| **Imugene warranties and indemnities** | Imugene provides a number of standard warranties in favour of the Vaxinia Shareholders regarding its standing and capacity to enter into the transaction. It also indemnifies the Vaxinia Shareholders for amounts required to be paid to them under the agreement. |

26 Mr Hopper and his related entities will hold 12.08% of Imugene's Shares following the total issuance of the Consideration Shares payable under the Share Sale Agreement.

## Resolution 1 - Approval of allotment and issue of Consideration Shares to unrelated shareholders of Vaxinia

27 The purpose of resolution 1 is for shareholders to approve, under ASX Listing Rule 7.1 and for all other purposes, the issue of the Consideration Shares to Vaxinia Shareholders who are not related parties of the Company.

28 ASX Listing Rule 7.1 prevents the Company from issuing more than 15% of its issued capital without shareholder approval. The allotment and issue of the Considerations Shares (if made without shareholder approval) may exceed the 15% threshold. Resolution 1 therefore proposes the approval of the allotment and issue of the Consideration Shares for the purpose of ASX Listing Rule 7.1.

29 Further details regarding the proposed issue of the Consideration Shares are set out below.

| **Consideration Shares** | |
|---|---|
| **Maximum number of Shares to be issued** | Up to 107,031,451 Consideration Shares |
| **Expected date of issue** | The Consideration Shares will be issued as follows:<br>(a) 22,039,290 Consideration Shares will be issued upon completion of the Share Sale Agreement and by no later than 3 months from the date of approval being granted under this resolution 1;<br>(b) 25,183,871 Consideration Shares will be issued upon allowance of investigational new drug (IND) application by the US Food and Drug Administration (FDA) in respect of CF33 and by no later than 30 June 2021;<br>(c) 28,328,452 Consideration Shares will be issued upon dosing of first patient in a Phase 1 Clinical Trial for CF33 and by no later than 31 March 2022; and<br>(d) 31,479,839 Consideration Shares will be issued upon Imugene meeting Phase 1 safety endpoints excluding efficacy and dose of CF33 and by no later than 30 June 2024.[1] |

[1] The Company has obtained a waiver from ASX from the operation of Listing Rule 7.3.2 which would otherwise operate so as to require all Consideration Shares the subject of Resolution 1 to be issued no later than 3 months after the date of this General Meeting. The waiver has been granted on the following conditions:

(a) the relevant Consideration Shares are issued no later than the dates set out in the table at paragraph 29. Those dates have been imposed by ASX as a condition to the grant of the waiver and did not form a condition of the Share Sale Agreement;

(b) the relevant Consideration Shares must be issued within 5 days of the respective milestone being satisfied, subject to shareholder approval having been obtained at this General Meeting;

(c) the milestones which must be satisfied for the relevant Consideration Shares to be issued are not varied;

(d) for any annual reporting period during which any of the Consideration Shares have been issued or any of them remain to be issued, the Company's annual report sets out in detail the number of Consideration Shares issued in that annual reporting period, the number of Consideration Shares that remain to be issued and the basis on which the Consideration Shares may be issued;

(e) in any half year or quarterly report for a period during which any of the Consideration Shares have been issued or remain to be issued, the Company must include a summary statement of the number of Consideration Shares issued during the reporting period, the number of Consideration Shares that remain to be issued and the basis on which the Consideration Shares may be issued; and

| Consideration Shares | |
|---|---|
| **Issue price** | $0.0155 per share |
| **Terms of issue** | The Consideration Shares will rank equally with all existing Shares on issue and will be subject to voluntary escrow for a period of six months from the date of issue. |
| **Allottees** | Vaxinia Shareholders who are not related parties of the Company. |
| **Intended use of funds raised** | Not applicable. The Consideration Shares are being issued as consideration under the Share Sale Agreement. |

30 Resolution 1 is subject to Shareholders also approving resolutions 2 and 3. Accordingly, if either of those resolutions are not passed, resolution 1 shall also not be passed.

**Directors' recommendation**

31 The Directors, with Mr Paul Hopper and Dr Hoos abstaining, unanimously recommend you vote in favour of this resolution.

## Resolution 2 - Approval of allotment and issue of Consideration Shares to related parties: Paul Hopper and persons and entities related to him

**ASX Listing Rule 10.11**

32 ASX Listing Rule 10.11 requires a listed company to obtain shareholders' approval by ordinary resolution prior to the issue of securities to a related party of the Company. Once approval is obtained pursuant to Listing Rule 10.11, the Company is entitled to rely on Listing Rule 7.2, Exception 14 as an exception to any requirement that may otherwise apply requiring Shareholder approval under Listing Rule 7.1.

33 Pursuant to, and in accordance with, the requirements of Listing Rule 10.13, the following information is provided in relation to the proposed issuance of up to 423,769,354 Consideration Shares to Mr Paul Hopper, a related party by virtue of him being a director of Imugene, and persons and entities related to Mr Paul Hopper:

| Consideration shares | |
|---|---|
| **Allottees** | Mr Paul Hopper, a Director of Imugene, and persons and entities related to Mr Paul Hopper |
| **Maximum number of Shares to be issued** | Up to 423,769,354 Consideration Shares |
| **Issue price** | $0.0155 per share |
| **Date by which the Company will issue the Shares** | The Consideration Shares will be issued as follows:<br>(a) 105,955,065 Consideration Shares will be issued upon completion of the Share Sale Agreement and by no later than one month from the date of approval being granted under this resolution 1; |

(f) the Company releases the terms of this waiver to the market at the same time this Notice of Meeting is released to ASX.

| Consideration shares | |
|---|---|
| | (b) 94,170,967 Consideration Shares will be upon allowance of investigational new drug (IND) application by the US Food and Drug Administration (FDA) in respect of CF33 and by no later than 30 June 2021;<br>(c) 105,929,613 Consideration Shares will be issued upon dosing of first patient in a Phase 1 Clinical Trial for CF33 and by no later than 31 March 2022; and<br>(d) 117,713,710 Consideration Shares will be issued upon Imugene meeting Phase 1 safety endpoints excluding efficacy and dose of CF33 and by no later than 30 June 2024.[2] |
| **Terms of issuance of Shares** | The Consideration Shares will rank equally with all existing Shares on issue and will be subject to voluntary escrow for a period of 12 months from the date of issue. |
| **Intended use of funds raised** | Not applicable. The Consideration Shares are being issued as consideration under the Share Sale Agreement. |

**Chapter 2E Corporations Act**

34 All Directors, in the interests of good governance, believe that it is prudent to seek Shareholder approval for the purposes of section 208 of the Corporations Act.

35 Chapter 2E of the Corporations Act prohibits a public company from giving a financial benefit to a related party of the public company unless providing the benefit falls within a prescribed exception to the general prohibition. Relevantly, there is an exception if the company first obtains the approval of its shareholders in a general meeting in circumstances where certain requirements specified in Chapter 2E in relation to the convening of that meeting have been met.

36 A 'Related Party' is defined widely in section 228 of the Corporations Act and includes, relevantly:

(a) a director (or proposed director) of a public company;

(b) any entity that is controlled by a director of the public company;

[2] The Company has obtained a waiver from ASX from the operation of Listing Rule 10.13.3 which would otherwise operate so as to require the Consideration Shares the subject to Resolution 2 to be issued no later than one month after the date of this General Meeting. The waiver has been granted on the following conditions:

(a) the relevant Consideration Shares are issued no later than the dates set out in the table at paragraph 33. Those dates have been imposed by ASX as a condition to the grant of the waiver and did not form a condition of the Share Sale Agreement;
(b) the relevant Consideration Shares must be issued within 5 days of the respective milestone being satisfied, subject to shareholder approval having been obtained at this General Meeting;
(c) the milestones which must be satisfied for the relevant Consideration Shares to be issued are not varied;
(d) for any annual reporting period during which any of the Consideration Shares have been issued or any of them remain to be issued, the Company's annual report sets out in detail the number of Consideration Shares issued in that annual reporting period, the number of Consideration Shares that remain to be issued and the basis on which the Consideration Shares may be issued;
(e) in any half year or quarterly report for a period during which any of the Consideration Shares have been issued or remain to be issued, the Company must include a summary statement of the number of Consideration Shares issued during the reporting period, the number of Consideration Shares that remain to be issued and the basis on which the Consideration Shares may be issued; and
(f) the Company releases the terms of this waiver to the market at the same time this Notice of Meeting is released to ASX.

(c) spouses of a director of the public company; and

(d) children of a director of the public company.

37 A 'Financial Benefit' for the purposes of the Corporations Act has a very wide meaning. It includes the public company issuing securities to a related party.

38 Mr Paul Hopper is a related party of the Company because he is a director of Imugene and the proposed issue of Consideration Shares to him is a Financial Benefit.

39 Mr Hopper's related entities are also related parties of the Company because they include:

(a) an entity that is controlled by Mr Hopper;

(b) the spouse of Mr Hopper; and

(c) children of Mr Hopper,

and the proposed issue of Consideration Shares to each of them is a Financial Benefit.

40 Accordingly, the Company seeks Shareholder approval for the issue of the Consideration Shares to Mr Paul Hopper and the entities and persons related to him under section 208 Corporations Act.

**Specific information required under the Corporations Act**

41 For the purposes of Chapter 2E of the Corporations Act, the related party to whom Resolution 2 would permit the financial benefit to be given pursuant to section 219(1)(a) Corporations Act is Mr Paul Hoper, a related party of the Company by virtue of him being a Director, and each of his related entities and persons.

42 The nature of the financial benefit pursuant to section 219(1)(b) Corporations Act for Mr Paul Hopper and persons and entities related to him is the issuance of up to 423,769,354 Consideration Shares at an issue price of $0.0155 per Consideration Share.

43 The Non-Interested Directors consider that the reasons for giving this financial benefit are:

(a) the Company wishes to maximise the use of its cash resources towards other strategic initiatives and equity based incentives;

(b) the Consideration Shares are being issued on the same terms as all other Consideration Shares being issued to other Vaxinia Shareholders under the terms of the Share Sale Agreement;

(c) the financial benefit is appropriate and commensurate with the value of the licensed asset, particularly in view of:

(i) the opportunities to acquire the rights to develop therapeutic candidates of this nature and quality since are scarce; and

(ii) Imugene's ability to leverage its existing expertise and infrastructure in the field of oncolytic viruses;

(d) other oncolytic viruses that are therapeutic candidates have commanded substantial acquisition prices commensurate with the financial benefit being provided to the Vaxinia Shareholders;

(e) if Imugene had not secured the rights to the licensed asset, Vaxinia would have been entitled to itself (or with third parties) develop the licensed oncolytic viruses – and this would have represented a significant opportunity cost to Imugene; and

(f) the deferred and conditional consideration being provided to the Vaxinia Shareholders under the Share Sale Agreement is in the form of the Consideration Shares and therefore aligns the interests of both Imugene and the Vaxinia Shareholders in that the benefit conferred on the Vaxinia Shareholders is subject to Imugene de-risking the development of the licensed oncolytic virus.

44 On this basis the Non-Interested Directors believe the giving of the financial benefit, as constituted by the issue of the Consideration Shares to Mr Paul Hopper and persons and entities related to him is in the best interests of the Company and its Shareholders.

**Directors' Interest and other remuneration (section 219(1)(d))**

45 Mr Paul Hopper has a material personal interest in the outcome of Resolution 2 as it proposes that the Consideration Shares be issued, to him and his related entities and persons.

46 Details of Mr Paul Hopper's interests and remuneration are set out below:

Mr Paul Hopper is contractually remunerated at $137,400 p.a. in his capacity as Executive Chairman of the Company. He may also be entitled to receive a non-contractual one-off cash bonus based on past performance at the discretion of the Board.

On 13 November 2018 at the previous Annual General Meeting, shareholders approved the granting of 25,000,000 options to Paul Hopper, Director, or his nominee on the terms set out in the Notice of Meeting released on 9 October 2018 as a non-recurring event.

Mr Paul Hopper and related entities own 76,178,722 fully paid ordinary shares and 25,827,281 options in the Company.

47 The remaining Non-Interested Directors do not have a material personal interest in the outcome of Resolution 2.

**Valuation of Shares**

48 The value of the Consideration Shares on the close of trading on 10 October 2019 (being the last trading day before this Notice of Meeting was approved by the Board) was $0.02.

**Existing interests and the dilutionary effect on other Shareholders' interests**

49 The effect that the issuance of the Consideration Shares the subject to this resolution 2 will have on the interests of Mr Paul Hopper and his related entities and persons relative to other Shareholders' interests is set out in the following table. The table assumes no further issues of shares in, or reconstruction of the capital of the before the issuance of any Consideration Shares.

| | **Paul Hopper*** | **Alexandra Hopper** | **Horatia Hopper** | **India Hopper** | **Scarlett Hopper** | **Deborah Coleman** | **Moreglade Pty Ltd** |
|---|---|---|---|---|---|---|---|
| **The total number of shares on issue in the capital of the Company** | 3,609,847,749 | | | | | | |
| **Shares currently held** | 30,831,682 | - | - | - | - | 16,784,540 | 28,562,500 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **% of Shares currently** | 0.85% | 0.00% | 0.00% | 0.00% | 0.00% | 0.46% | 0.79% |
| **Shares to be issued under Resolution 2[3]** | 4,995,000 | 4,995,000 | 4,995,000 | 4,995,000 | 4,995,000 | 24,867,581 | 373,926,773 |
| **Shares that will be held following the issuance of the Consideration Shares**** | 35,826,682 | 4,995,000 | 4,995,000 | 4,995,000 | 4,995,000 | 41,652,121 | 402,489,273 |
| **% of Shares that will be held following the issuance of the Consideration Shares** | 0.87% | 0.12% | 0.12% | 0.12% | 0.12% | 1.01% | 9.72% |

** Shares held in Kilinwata Investments Pty Ltd (indirect interest)*
*** assuming no further shares are issued*

50 The effect that the issuance of the Consideration Shares the subject to this resolution 2 will have on the interests of the other substantial Shareholders of the Company is set out in the following table. The table assumes no further issues of shares in, or reconstruction of the capital of the before the issuance of any Consideration Shares.

| | **National Nominees Limited** |
|---|---|
| **The total number of shares on issue in the capital of the Company** | 3,609,847,749 |
| **Shares currently held** | 205,232,943 |
| **% of Shares currently** | 5.69% |
| **Shares to be issued under Resolution 2[4]** | 423,769,354 |
| **Shares that will be held following the issuance of the Consideration Shares**** | 205,232,943 |
| **% of Shares that will be held following the issuance of the Consideration Shares** | 5.08% |

51 Save as set out in this Explanatory Memorandum, the Directors are not aware of any other information that will be reasonably required by Shareholders to make a decision in relation to the benefits contemplated by Resolution 2.

**Rationale for the Proposed Transaction**

52 The Non-Interested Directors have given careful consideration to the Proposed Transaction. The Non-Interested Directors believe the key rationale for the Proposed Transaction is described above, and is to allow the Company to proceed with the Licence Agreement. As mentioned above, Imugene's opportunity to acquire the exclusive licence from City of Hope was facilitated through Vaxinia. Vaxinia's shareholders have therefore agreed to relinquish the opportunity to Imugene in consideration for acquiring shares in Imugene pursuant to the Share Sale Agreement (and in exchange for their Vaxinia shares).

53 If the resolutions subject to this Notice of Meeting are not approved by Shareholders, the Share Sale Agreement will not complete and will be terminated. This, in turn, means that the Licence

[3] Assuming all milestones are achieved and the maximum number of Consideration Shares are issued.
[4] Assuming all milestones are achieved and the maximum number of Consideration Shares are issued.

Agreement shall also not come into effect and shall be terminated. The implications of this outcome to the Company are as follows:

(a) there would be a substantial opportunity cost to Imugene in not being able to develop and commercialise the licensed oncolytic viruses especially in view of:

(i) the scarcity of oncolytic virus therapeutic candidates of this quality;

(ii) the substantial pre-clinical work that has been completed to date on the licensed oncolytic virus and the quality of those results;

(iii) Imugene's ability to leverage its existing expertise and infrastructure in the field of oncolytic viruses; and

(iv) substantial amounts that have been paid to date for competing oncolytic viruses, which appear to be less efficacious than the licensed oncolytic virus; and

(b) Imugene's shareholders will forgo the opportunity to participate in the creation of value which is expected to be significantly greater than would be the case based on Imugene's existing therapeutic candidates alone, especially in view of the circumstances described in paragraph (a) above.

54 Resolution 2 is subject to Shareholders also approving resolutions 1 and 3. Accordingly, if either of those resolutions are not passed, resolution 2 shall also not be passed.

**Directors' recommendation**

55 The Directors, with Mr Paul Hopper and Dr Hoos abstaining, unanimously recommend that you vote in favour of this resolution.

## Resolution 3 - Approval of acquisition of Vaxinia Pty Ltd, a related entity of Imugene

56 Listing Rule 10.1 has the effect that Imugene cannot acquire a substantial asset from, or dispose of a substantial asset to, a person in a position of influence with Imugene without the approval of Imugene Shareholders.

57 The Board has determined that Vaxinia is an entity to which Listing Rule 10.1 applies. In particular, Vaxinia is a related party of the Company (by virtue of it being an entity controlled by Mr Paul Hopper, a director of Imugene) for the purposes of Listing Rule 10.1.1.

58 Under Listing Rule 10.2, an asset is substantial if its value is 5% or more of the equity interest of Imugene in the latest accounts provided to ASX under the Listing Rules. A listed company's equity interests are the sum of paid up capital, reserves, and accumulated profits or losses, disregarding redeemable preference share capital and outside equity interests, as shown in the listed company's consolidated financial statements. The Board has determined that the Proposed Transaction will involve a transaction in relation to a substantial asset for the purposes of Listing Rule 10.2.

59 The equity interests of Imugene as set out in its latest financial accounts (being those provided to ASX in respect of the half year ended 31 December 2018) are equal to $31,189,570.

**Independent Expert's Report**

60 The Board has appointed PKF Melbourne Corporate Pty Ltd (**Independent Expert**) as an independent expert to prepare the Independent Expert's Report in respect of the Proposed Transaction. The Independent Expert's Report is included in the Annexure and forms part of this Notice of Meeting.

61 The Independent Expert's Report includes a detailed consideration and assessment of the Proposed Transaction.

62 The Independent Expert has concluded that the Proposed Transaction is fair and reasonable to the Non-Associated Shareholders.

***Fairness***

63 In considering whether the Proposed Transaction is fair, the Independent Expert considered:

(a) the value of an Imugene share on a control basis before the Proposed Transaction to be in the range of 1.9 to 2.5 cents per share with a midpoint of 2.2 cents per share; and

(a) the value of an Imugene share on a control basis after the Proposed Transaction to be in the range of 2.0 to 2.6 cents per share with a midpoint of 2.3 cents per share.

64 As the midpoint value of an Imugene share after the Proposed Transaction of 2.3 cents per share is greater than the midpoint value of an Imugene share prior to the Proposed Transaction of 2.2 cents per share, the Independent Expert concluded that the Proposed Transaction is fair.

***Reasonableness***

65 In considering whether the Proposed Transaction is reasonable, the Independent Expert considered that:

(a) they had assessed the Proposed Transaction to be fair;

(b) they analysed the share price of Imugene before the announcement of the Proposed Transaction and concluded that the Imugene shares had a market value of $0.015 per share. They note that the VWAP of Imugene shares since the Proposed Transaction was announced is $0.022 per share. There is therefore evidence that the share market has viewed the Proposed Transaction as value accretive for the Imugene shareholders. If shareholders do not approve the Proposed Transaction, the share price may return to the levels at which the shares were trading prior to the announcement of the Proposed Transaction;

(c) the acquisition of the Licence will provide Imugene with access to an additional and promising technology. Adding further technologies to Imugene's portfolio of assets should act to reduce the risk of failure of any one of Imugene's technologies;

(d) the Licence requires Imugene to expend significant cash resources on the development of the licenced technology. This may divert available resources away from Imugene's existing projects; and

(e) the purchase of Vaxinia will result in the issue of additional shares thus diluting current shareholders. Furthermore, should the milestones set out in the agreement be achieved, then additional shares will be issued, further diluting current shareholders.

66 On the basis of those considerations, the Independent Expert concluded that the Proposed Transaction is fair and reasonable to the Non-Associated Shareholders.

67 The Directors (excluding Mr Paul Hopper) agree with the key considerations of the Proposed Transaction that were identified by the Independent Expert.

68 Resolution 3 is subject to Shareholders also approving resolutions 1 and 2. Accordingly, if either of those resolutions are not passed, resolution 3 shall also not be passed.

**Directors' recommendation**

69 The Directors, with Mr Paul Hopper and Dr Hoos abstaining, recommend that you vote in favour of this resolution 3.

# Glossary

## Imugene Limited ACN 009 179 551

| | |
|---|---|
| **ASIC** | means the Australian Securities and Investments Commission. |
| **ASX** | means ASX Limited ACN 008 624 691 or the securities exchange operated by it (as the case requires). |
| **BCPV** | means B-Cell peptide vaccines. |
| **Board** | means the board of directors of the Company. |
| **City of Hope** | means the City of Hope Cancer Centre in Los Angeles |
| **Company or Imugene** | means Imugene Limited ACN 009 179 551. |
| **Consideration Shares** | means up to 530,800,805 Shares to be issued to the shareholders of Vaxinia at a price of $0.0155 per Share under the Share Sale Agreement. |
| **Corporations Act** | means the *Corporations Act 2001* (Cth). |
| **Corporations Regulations** | means the *Corporations Regulations 2001* (Cth). |
| **Directors** | means the directors of the Company. |
| **Explanatory Memorandum** | means the explanatory memorandum attached to the Notice of Meeting. |
| **FDA** | means the US Food and Drug Administration. |
| **General Meeting** | means the Company's extraordinary general meeting the subject of this Notice of Meeting. |
| **Independent Committee** | means the independent committee established by the Company for the purposes of assessing and pursuing the Proposed Transaction and described in paragraph 13 of the Notice of Meeting. |
| **Independent Expert** | means PKF Melbourne Corporate Pty Ltd. |
| **Independent Expert's Report** | means the report prepared by the Independent Expert and annexed to this Notice of Meeting. |
| **Licence Agreement** | means the licence agreement entered into between the Company and City of Hope on 15 July 2019. |
| **Listing Rules** | means the listing rules of ASX. |
| **Non-Associated Shareholders** | has the meaning set out in the Independent Expert's Report. |
| **Non-Interested Directors** | means all Directors other than Mr Paul Hopper and Dr Axel Hoos. |
| **Notice of Meeting** | means the notice of meeting and includes the Explanatory Memorandum. |
| **OV** | means oncolytic virus. |
| **Proposed Transaction** | has the meaning set out in the Independent Expert's Report. |
| **Share Sale Agreement** | means the share sale agreement entered into between the Company and each Vaxinia Shareholder on 15 July 2019. |

| | |
|---|---|
| **Shares** | means the existing fully paid ordinary shares in the Company. |
| **Shareholder** | means a person who is the registered holder of Shares. |
| **Vaxinia** | means Vaxinia Pty Ltd ACN 630 535 901. |
| **Vaxinia Shareholder** | means each holder of shares in Vaxinia. |

# Annexure

Independent Expert Report

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**THE INDEPENDENT EXPERT HAS DETERMINED THAT THE PROPOSED TRANSACTION IS FAIR AND REASONABLE TO THE NON-ASSOCIATED SHAREHOLDERS**.

11 October 2019

The Directors
Imugene Limited
Level 3, 62 Lygon Street
Carlton VIC 3053

Dear Sirs

**RE: Independent Expert's Report**

## 1. Introduction

The directors of Imugene Limited ("Imugene" or the "Company") have requested PKF Melbourne Corporate Pty Ltd ("PKF Corporate") to prepare an Independent Expert's Report ("IER") in respect of the proposed acquisition by Imugene of 100% of the issued capital in Vaxinia Pty Ltd ("Vaxinia").

Concurrently with an agreement to acquire Vaxinia, Imugene has entered into a separate agreement to licence (the "Licence") an oncolytic virus technology, known as CF33 ("CF33"). The completion of the purchase of Vaxinia and the Licence becoming effective, although each are governed by separate agreements, are contingent on each other, therefore in order for Imugene to gain the benefit of the Licence it must complete the purchase of Vaxinia. For this reason, we regard the entering into of the Licence and the acquisition of Vaxinia as one transaction and in the balance of this report we refer to them as the "Proposed Transaction".

Mr Paul Hopper is the Executive Chairman of Imugene and is a director and shareholder of Vaxinia.

As Imugene is proposing to acquire Vaxinia, of which a majority shareholding and directorship is held by a related party of Imugene, the ASX Listing Rule 10.1 requires prior shareholder approval of the Proposed Transaction.

## 2. Proposed Transaction

### 2.1 Background

**Purchase of Vaxinia**

Vaxinia is a proprietary company that was only incorporated in December 2018 for the purpose of securing the right to develop and commercialise CF33. Vaxinia subsequently agreed to allow Imugene to secure the rights to develop and commercialise CF33 on the condition that Imugene acquires Vaxinia.

We have been advised as follows:

- Imugene's opportunity to acquire the Licence was facilitated through Vaxinia.
- In addition to Mr Hopper's part time involvement with Imugene, he operates a life science consulting business focussed on the acquisition of biotechnology assets from leading US & European medical institutions. Mr Hopper has had a personal business relationship with City of Hope since 2016.

- Mr Hopper, through Vaxinia, initially identified the Licence opportunity and conducted due diligence on CF33 as well as negotiated terms with City of Hope and developed several potential financing options for Vaxinia. Imugene, through its Chief Executive Officer, Ms Leslie Chong, approached Mr Hopper and asked for the opportunity to compete in the acquisition of CF33 with other interested parties, and that Vaxinia consider a potential offer from Imugene in preference to financing Vaxinia as a stand-alone company via an IPO or foreign venture capital investment. In return for being able to evaluate and potentially compete in obtaining access to CF33, Imugene entered into a confidentiality and non-circumvention agreement with Vaxinia, preventing Imugene from contracting directly with City of Hope in relation to the licencing of CF33 and enabling Imugene to gain access to a competitive transaction that was already significantly developed by Vaxinia.

As a result of the above, Vaxinia's shareholders agreed to relinquish the opportunity with City of Hope and their shares in Vaxinia to Imugene. This was detailed in a share sale deed (the "Deed") dated 15 July 2019 giving Imugene the right to acquire 100% of the issued capital in Vaxinia. The key financial terms of the purchase include a cash payment of $97,588 and the issue of 127,994,355 shares in Imugene. There is also a deferred consideration element of three earnout components should certain milestones be achieved. The milestones relate to the development of CF33 and are as follows:

Table 1

| Milestone | Description | Consideration |
|---|---|---|
| Milestone 1 | Allowance of investigational new drug by the US Food and Drug Administration in relation to CF33 | 119,354,838 Imugene shares |
| Milestone 2 | Dosing of first patient in a Phase 1 clinical trial of CF33 | 134,258,064 Imugene shares |
| Milestone 3 | Meeting Phase 1 safety endpoints excluding efficacy and dose | 149,193,548 Imugene shares |

*Source: The Deed*

We note that should either of the following occur, then it will be treated as all milestones being achieved:

- Change of control occurs in Imugene (other conditions as well), or
- Imugene merges or divests the CF33 technology.

Furthermore, Vaxinia does not currently have a right to the CF33 or the Licence. The value of Vaxinia principally derives from the due diligence work conducted on CF33, the assembly of an expert team to develop CF33, the preliminary identification and negotiation of the licencing arrangements with City of Hope.

**CF33**

CF33 is a chimeric vaccinia oncolytic poxvirus developed by Professor Yuman Fong of the City of Hope in California USA ("COH") (COH is a private, not for profit research and treatment hospital for cancer, diabetes, and other serious diseases). Professor Yuman Fong is the Chair of Surgery at COH and is an expert in the oncolytic virus field.

Oncolytic viruses ("OVs") are designed to both selectively kill tumour cells and activate the immune system against cancer cells, with the potential to improve clinical response and survival. OVs have the potential to transform oncology by directly causing tumour cell death, and also by delivering a potent payload in a targeted fashion that activates the immune system.

Should you require further details regarding CF33, Imugene has made multiple announcements regarding this on the ASX.

**The Licence**

The Licence is between Imugene and COH and was entered into on 15 July 2019. The Licence entitles Imugene access to the worldwide exclusive right to develop and commercialise CF33. The Licence includes a condition precedent that the shareholders of Imugene approve the acquisition of Vaxinia.

The Licence includes a number of milestones, some financial and others that relate to the progress in the development and commercialisation of CF33. Of the financial requirements some are contingent on future events and others are trigged by the approval of the Proposed Transaction. These are summarised below.

Financial obligations upon approval of the Proposed Transaction

The initial payments to purchase CF33 total US$ 3,192,578 and are payable over the next two years. They are as detailed below.

- Payment of US$ 3m licence fee to COH. This is split into three equal tranches of US$ 1m payable within one week of the following dates:
  - 15 October 2019[1];
  - 15 July 2020; and
  - 15 July 2021.
- Reimburse COH for costs already incurred totalling US$ 192,578.

Contingent on future events and ongoing costs

The Licence agreement requires Imugene to meet a number of milestones. Some of the milestones also trigger additional payments to COH. The milestones are summarised below.

Table 2

| Milestone | Deadline | Requirement | Payment to COH |
|---|---|---|---|
| Milestone A | 8-Jul-21 | to spend not less than US$ 6million on the development of CF33 | - |
| Milestone B | 8-Jul-21 | to dose the first patient in a Phase 1 clinical trial of CF33 | US$ 0.15m |
| Milestone C | 8-Jul-23 | to spend not less than US$9 million, in addition to the US$6 million spent for Milestone A, on the development of CF33 | - |
| Milestone D | 8-Jul-23 | to dose the first patient in a Phase 2 clinical trial of CF33 | US$ 0.3m |
| Milestone E | 8-Jul-26 | to dose the first patient in a Phase 3 clinical trial of CF33 | US$ 1m |
| Milestone F | 8-Jul-29 | receive marketing approval in the US for CF33 | US$ 3m |
| Milestone G | No deadline | receive marketing approval in any jurisdiction other than the US | US$ 1.5m |

*Source: The Licence*

The Licence includes sales milestones should net sales meet a certain level during a year as well as royalties on net sales. In addition, we note the following potential future costs:

- The reimbursement of COH for costs incurred in maintaining the patents;
- Annual licence fee payable to COH of US$ 50,000; and
- If there is a change of control in Imugene, US$ 1.5m will be required to be paid to COH.

## 2.2 Proposed Resolutions to be approved by shareholders

Imugene is seeking shareholder approval of the following resolutions as listed in the Notice of General Meeting:

Resolution 1 *"That, subject to shareholders approving resolutions 2 and 3, for the purposes of ASX Listing Rule 7.1 and for all other purposes, shareholders approve the issue of up to 107,031,451 Consideration Shares at an issue price of $0.0155 per share to unrelated Vaxinia Shareholders as detailed in the Explanatory Memorandum."*

[1] We understand that Imugene has requested from COH that this payment be delayed until after approval of the Proposed Transaction.

| | |
|---|---|
| Resolution 2 | *"That, subject to shareholders approving resolutions 1 and 3, for the purposes of ASX Listing Rule 10.11, section 208 of the Corporations Act and for all other purposes, the Company be authorised to issue up to 423,769,354 Consideration Shares at an issue price of $0.0155 per share to Mr Paul Hopper, a related party of the Company by virtue of him being a Director of Imugene, and persons and entities related to him, on the terms and conditions set out in the Explanatory Memorandum."* |
| Resolution 3 | *"That, subject to shareholders approving resolutions 1 and 2, for the purposes of Listing Rule 10.1 and for all other purposes, approval is given for the Company to acquire all of the shares in Vaxinia Pty Ltd, on the terms and conditions set out in the Explanatory Memorandum."* |

Whilst we are only required to opine on Resolution 3, as explained in Sections 1 and 2, the securing of the Licence is conditional on the acquisition of Vaxinia, all three Resolutions must be approved for the Proposed Transaction to take effect.

The Proposed Transaction is permitted by the Australian Securities Exchange ("ASX") (Listing Rule 10.1), provided that the transaction is approved by a resolution passed at a general meeting of shareholders, other than those involved in the Proposed Transaction or persons associated with such persons (i.e. the "Non-Associated Shareholders").

The independent expert's report is to be prepared in accordance with the Australian Securities and Investments Commission ("ASIC") Regulatory Guide 111 – Content of expert reports.

## 3. Summary Opinion

In our opinion, the Proposed Transaction is fair and reasonable to the Non-Associated Shareholders. Our principal reasons for reaching this opinion are:

**Fairness**

a) In Section 7 we assessed the value of an Imugene share on a control basis before the Proposed Transaction to be in the range of 1.9 to 2.5 cents per share with a midpoint of 2.2 cents per share.

b) In Section 12 we assessed the value of an Imugene share on a control basis after the Proposed Transaction to be in the range of 2.0 to 2.6 cents per share with a midpoint of 2.3 cents per share.

c) As the value of an Imugene share after the Proposed Transaction of 2.3 cents per share is greater than the value of an Imugene share prior to the Proposed Transaction of 2.2 cents per share, we have concluded that the Proposed Transaction is fair.

**Reasonableness**

The key reasons for assessing the Proposed Transaction as reasonable are:

- We assessed the Proposed Transaction to be fair.
- In Section 7.3 of this report, we analysed the share price of Imugene before the announcement of the Proposed Transaction and we concluded that the Imugene shares had a market value of $0.015 per share. We note that the VWAP of Imugene shares since the Proposed Transaction was announced is $0.022 per share. There is therefore evidence that the share market has viewed the Proposed Transaction as value accretive for the Imugene shareholders. If shareholders do not approve the Proposed Transaction, the share price may return to the levels at which the shares were trading prior to the announcement of the Proposed Transaction.

- The acquisition of the Licence will provide Imugene with access to an additional and promising technology. Adding further technologies to Imugene's portfolio of assets should act to reduce the risk of failure of any one of Imugene's technologies.

- The Licence requires Imugene to expend significant cash resources on the development of the licenced technology. This may divert available resources away from Imugene's existing projects.

- The purchase of Vaxinia will result in the issue of additional shares thus diluting current shareholders. Furthermore, should the milestones set out in the agreement be achieved, then additional shares will be issued, further diluting current shareholders.

## 4. Structure of this Report

This report is divided into the following Sections:

## Glossary

Table 3

| Glossary Term | Definition |
|---|---|
| $ | Australian Dollar |
| Acuity | Acuity Technology Management Pty Ltd |
| ASIC | Australian Securities and Investments Commission |
| ASX | Australian Securities Exchange |
| CF33 | An oncolytic virus technology |
| COH | The City of Hope, research and treatment hospital in California USA |
| Deed | The share sale deed between Imugene and Vaxinia |
| FY (ie FY19) | The financial year ended 30 June (ie 30 June 2019) |
| IER | Independent Expert's Report |
| Imugene or the Company | Imugene Limited |
| Licence | The agreement between Imugene and COH setting out the right to develop and commercialise CF33 |
| m | Million |
| Non-Associated Shareholders | Shareholders not involved in the Proposed Transaction or persons associated with such persons |
| OSU | Ohio State University |
| OVs | Oncolytic viruses |
| PKF Corporate | PKF Melbourne Corporate Pty Ltd |
| Proposed Transaction | The proposed acquisition of Vaxinia and securing the Licence |
| RG 111 | RG 111 - Content of Expert Reports, issued by ASIC |
| US$ | United States Dollar |
| Vaxinia | Vaxinia Pty Ltd |
| VWAP | Volume weighted average price |

## 5. Purpose of this Report

This report has been prepared to meet the following regulatory requirements:

### 5.1 ASX - Listing Rules 10.1 and 10.2

Listing Rules 10.1 and 10.2 require a company to obtain shareholder approval at a general meeting when the sale or acquisition of an asset, which has a value in excess of 5% of the shareholders' funds as set out in the latest financial statements given to the ASX under the listing rules, is to be made to or from:

(i) a related party;
(ii) a subsidiary;
(iii) a substantial shareholder who is entitled to at least 10% of the voting securities, or a person who was a substantial shareholder entitled to at least 10% of the voting securities at any time in the 6 months before the transaction;
(iv) an associate of a person referred to in paragraphs (i), (ii) or (iii) above; or
(v) a person whose relationship to the entity or a person referred to above is such that, in the ASX's opinion, the transaction should be approved by security holders.

Mr Paul Hopper is the Executive Chairman of Imugene and is also a director and shareholder of Vaxinia.

As the value of the consideration payable to acquire Vaxinia exceeds $1,364,736 (5% of Imugene's shareholders funds as at 30 June 2019, Listing Rule 10.1 will apply to the Proposed Transaction.

## 5.2 ASIC Regulatory Guides

This report has been prepared in accordance with the ASIC Regulatory Guides and more particularly:

**RG 111 – Content of Expert Reports ("RG111")**

RG 111.55 Generally, ASIC expects an expert who is asked to analyse a related party transaction to express an opinion on whether the transaction is 'fair and reasonable' from the perspective of non-associated members.

## 5.3 General

The terms "fair" and "reasonable" are not defined in the Corporations Act 2001 (the "Act"), however, guidance as to the meaning of these terms is provided by ASIC in Regulatory Guide 111. For the purpose of this report, we have defined them as follows:

| | |
|---|---|
| Fairness | the Proposed Transaction is "fair" if the value of an Imugene share after the Proposed Transaction is equal to or greater than the value of an Imugene share before the Proposed Transaction. |
| Reasonableness | the Proposed Transaction is "reasonable" if it is fair. It may also be "reasonable" if, despite not being "fair" but after considering other significant factors, we consider that the advantages of proceeding with the Proposed Transaction outweigh the disadvantages of proceeding. |

What is fair and reasonable for the Non-Associated Shareholders should be judged in all the circumstances of the proposal.

The methodology that we have used to form an opinion as to whether the Proposed Transaction is fair and reasonable, is summarised as follows:

(i) In determining whether the Proposed Transaction is fair, we have:

- assessed the value of one Imugene share on a control basis before the Proposed Transaction;
- assessed the value of Vaxinia and the Licence of CF33;
- assessed the value of an Imugene share on a control basis, after the Proposed Transaction; and
- compared the value of one Imugene share before the Proposed Transaction with the value of one Imugene share after the Proposed Transaction.

(ii) In determining whether the Proposed Transaction is reasonable, we have analysed other significant factors that the Non-Associated Shareholders should review and consider prior to accepting or rejecting the Proposed Transaction.

## 5.4 Corporations Act 2001 – Chapter 2E

Section 208 of the Act states that a public company must obtain approval from the company's members if it gives a financial benefit to a related party unless the benefit falls within the scope of an exception to the Act as set out in Section 210 to 216 of the Act.

Section 210 of the Act states that member approval is not needed to give a financial benefit on terms that:

(a) would be reasonable in the circumstances if the public company or entity and the related party were dealing at arm's length; or
(b) are less favourable to the related party than the terms referred to in paragraph (a) above.

Section 211 of the Act states that member approval is not needed to give a financial benefit if:
(a) the benefit is remuneration to a related party as an officer or employee;
(b) to give the remuneration would be reasonable.

Section 228 of the Act defines 'related parties' as:
(a) directors of the public company;
(b) directors (if any) of an entity that controls the public company;
(c) if the public company is controlled by an entity that is not a body corporate – each of the persons making up the controlling entity;
(d) spouses and de facto spouses of the persons referred to in paragraphs (a) to (c) above.

The issuance of Imugene shares to Mr Paul Hopper and his associates, as part of the Proposed Transaction is permitted by the Act, however Section 208 provides that prior shareholder approval is required before a public company can provide a financial benefit to a related party. Shareholders must be provided with all the information that is reasonably required in order for them to decide whether or not it is in the company's interests to approve the giving of the financial benefit.

The ASIC media release issued on 10 August 2004 has expressed the view that the financial benefit must be adequately valued. ASIC has gone on to state:

> "An adequate valuation requires the basis of the valuation and the principal assumptions behind the valuation to be disclosed, and in some circumstances it may be necessary to provide a valuation by an independent expert."

The Directors of Imugene have requested PKF Corporate to independently assess the value of this financial benefit.

## 6. Imugene – Key Information

### 6.1 Background

6.1.1 Imugene is an Australian Securities Exchange (ASX) listed biotechnology company with operations in Australia, America and Europe, developing cancer immunotherapies targeting B-cell peptide vaccines. The company specialises in immune-oncology therapies, developing a range of immunotherapies that seek to activate the immune system of cancer patients to treat and eradicate tumours.

6.1.2 Imugene's technologies seek to harness the body's immune system to generate antibodies against tumours. The product pipeline includes multiple immunotherapy B-cell vaccine candidates aimed at treating a variety of cancers.

6.1.3 Imugene has two HER-2 B-cell vaccines in clinical trials, one from Ohio State University ("OSU") known as B-Vex in Phase 2 clinical trial, and another from the University of Vienna Medical School known as HER-Vaxx in a Phase 1b/2 clinical trial. Both vaccines previously undertook Phase 1 clinical trial studies. Imugene also has a pipeline of other vaccines undergoing earlier stage development.

6.1.4 Imugene currently targets the gastric and lung cancer segment but the technology has the potential to extend beyond these cancer types in the future. In particular, it's HER-Vaxx vaccine targets patients with gastric cancer.

6.1.5 Imugene has undertaken two capital raisings, one for $8.7m in December 2017 and another for $20.1m in July 2018, to help fund its current programs. Imugene has a number of institutional investors based in Australia, the United States and Hong Kong.

6.1.6 The Company employs a team of cancer experts with extensive experience in developing new cancer therapies. Section 6.2 of this report provides a listing of the directors and key executives of Imugene along with their roles.

6.1.7 Imugene was registered in May 1986 and is headquartered in Melbourne, Australia. Its previous names are Vostech Ltd, Vos Industries Ltd, Vos Industries Pty Ltd, Vosfry Systems Australia Pty Ltd and Caldable Pty Ltd.

## 6.2 Directors and key personnel

6.2.1 Imugene's Board of Directors and other key executives as at October 2019 are presented in the table below.

Table 4

| Imugene Limited<br>Directors and management team | Position |
|---|---|
| **Directors** | |
| Ms. Leslie Chong | Managing Director and Chief Executive Officer |
| Mr. Paul Hopper | Executive Chairman |
| Mr. Charles Walker | Non-Executive Director |
| Dr. Alex Hoos | Non-Executive Director |
| Mr. Jens Eckstein | Non-Executive Director |
| Dr. Lesley Russell | Non-Executive Director |
| **Management Team** | |
| Dr. Mark Marino | Chief Medical Officer |
| Dr. Nick Ede | Chief Technology Officer |
| Dr. Anthony Good | Vice President of Clinical Research |

## 6.3 Share capital

6.3.1 As at 8 October 2019, Imugene had on issue 3,609,847,749 fully paid ordinary shares. The major shareholders of Imugene are presented in the table below. As at that date, the top 20 shareholders, as recorded on the share register, held 26.0% of the issued ordinary capital of Imugene.

Table 5

| Imugene Limited<br>Top 20 Shareholders | Shareholding | % |
|---|---|---|
| National Nominees Limited | 200,617,846 | 5.6% |
| Dr. Nicholas Smith | 118,000,000 | 3.3% |
| HSBC Custody Nominees (Australia) Limited | 62,789,706 | 1.7% |
| Ms. Sarah Cameron | 60,000,000 | 1.7% |
| Netwealth Investments Limited | 53,321,366 | 1.5% |
| Citicorp Nominees Pty Ltd | 46,201,861 | 1.3% |
| Jem Investment Fund Holdings Pty Ltd | 39,191,228 | 1.1% |
| Mr. Mark Phillip Juan | 35,000,000 | 1.0% |
| John Dahlsen Superannuation Fund Pty Ltd | 33,356,142 | 0.9% |
| Tisia Nominees | 29,263,159 | 0.8% |
| JP Morgan Nominees Australia Pty Ltd | 28,565,845 | 0.8% |
| Kilinwata Investments Pty Ltd | 28,379,050 | 0.8% |
| Moreglade Pty Ltd | 28,062,500 | 0.8% |
| Dr. Roger Aston | 27,562,500 | 0.8% |
| Mr. Charles Edwyn Walker | 26,020,370 | 0.7% |
| Mr. Andrew John Kempson | 25,921,053 | 0.7% |
| Sunset Capital Management Pty Ltd | 25,000,000 | 0.7% |
| Mr. David Russell Stewart & Mrs. Adrienne Ruth Stewart | 24,000,000 | 0.7% |
| HSBC Custody Nominees (Australia) Limited - GSCO ECA | 23,991,603 | 0.7% |
| Strategic Vision Equities Pty Ltd | 23,000,000 | 0.6% |
| **Total** | **938,244,229** | **26.0%** |
| **Total issued capital** | 3,609,847,749 | 100.0% |

*Source: The share register dated 8 October 2019*

In the table below we have included the shareholdings of the directors of Imugene and their related parties as at 28 August 2019.

Table 6

| Imugene Limited<br>Director Shareholdings | Shareholding | % |
|---|---|---|
| Ms. Leslie Chong | 3,511,884 | 0.1% |
| Mr. Paul Hopper | 76,178,722 | 2.1% |
| Mr. Charles Walker | 27,832,870 | 0.8% |
| Dr. Axel Hoos | 10,000,000 | 0.3% |
| Mr. Jens Eckstein | - | 0.0% |
| Dr. Leslie Russell | - | 0.0% |
| **Total** | **117,523,476** | **3.3%** |
| **Total issued capital** | 3,609,847,749 | 100.0% |

*Source: The FY19 financial statements of Imugene*

6.3.2 Imugene also has 657,774,240 options on issue that are convertible into ordinary shares of Imugene. There are 2 tranches of options listed on the ASX and another 12 tranches which are not listed. We have summarised these in the table below, including expiration date and exercise price.

Table 7

| Imugene Limited<br>Summary of options | Number on issue | Expiry | Exercise price<br>$ |
|---|---|---|---|
| **Options quoted on ASX** | | | |
| IMUOA | 242,456,487 | 30-Nov-20 | 0.0260 |
| IMUOB | 248,317,753 | 30-Nov-21 | 0.0400 |
| | **490,774,240** | | |
| **Options not quoted on ASX** | | | |
| Tranche 1 | 2,500,000 | 26-Oct-19 | 0.0125 |
| Tranche 2 | 2,500,000 | 26-Oct-19 | 0.0175 |
| Tranche 3 | 9,000,000 | 14-Sep-20 | 0.0125 |
| Tranche 4 | 9,000,000 | 14-Sep-20 | 0.0150 |
| Tranche 5 | 9,000,000 | 14-Sep-20 | 0.0175 |
| Tranche 6 | 10,000,000 | 4-Dec-20 | 0.0200 |
| Tranche 7 | 20,000,000 | 30-Jun-21 | 0.0400 |
| Tranche 8 | 35,000,000 | 30-Jun-21 | 0.0420 |
| Tranche 9 | 35,000,000 | 30-Jun-21 | 0.0450 |
| Tranche 10 | 5,000,000 | 31-Aug-21 | 0.0400 |
| Tranche 11 | 5,000,000 | 31-Aug-21 | 0.0420 |
| Tranche 12 | 25,000,000 | 13-Jun-22 | 0.0400 |
| | **167,000,000** | | |
| Total Imugene options on issue | **657,774,240** | | |

*Source: The option register dated 8 October 2019*

6.3.3 The top 20 option holders have been presented in the table below. The top 20 represented 75.0% of the options on issue.

Table 8

| Imugene Limited<br>Top 20 Option Holders | Options | % |
|---|---|---|
| Mi Ok Chong | 77,000,000 | 11.7% |
| Merrill Lynch (Australia) Nominees Pty Ltd | 44,877,511 | 6.8% |
| HSBC Custody Nominees (Australia) Limited | 42,547,722 | 6.5% |
| Mr. Mark Phillip Juan | 41,391,689 | 6.3% |
| CS Fourth Nominees Pty Ltd | 34,445,856 | 5.2% |
| CS Third Nominees Pty Ltd | 30,692,586 | 4.7% |
| Ardroy Securities Pty Ltd | 25,000,000 | 3.8% |
| Moreglade Pty Ltd | 25,000,000 | 3.8% |
| Brispot Nominees Pty Ltd | 24,513,900 | 3.7% |
| National Nominees Limited | 23,162,966 | 3.5% |
| UBS Nominees Pty Ltd | 21,066,656 | 3.2% |
| Dr. Axel Hoos | 15,000,000 | 2.3% |
| Mrs. Anne-Marie Ede | 15,000,000 | 2.3% |
| CVC Limited | 13,657,175 | 2.1% |
| Hobe Pty Ltd | 11,500,000 | 1.7% |
| Mr. Paul Homewood | 10,491,294 | 1.6% |
| Dr. Mark Marino | 10,000,000 | 1.5% |
| HSBC Custody Nominees (Australia) Limited - GSCO ECA | 9,629,191 | 1.5% |
| HSBC Custody Nominees (Australia) Limited - A/C 2 | 9,335,890 | 1.4% |
| Mr Luke Nolan | 9,000,000 | 1.4% |
| **Total** | **493,312,436** | **75.0%** |
| **Total issued options** | 657,774,240 | 100.0% |

*Source: The option register dated 8 October 2019*

In the table below we have included the option holdings of the directors of Imugene and their related parties as at 28 August 2019.

Table 9

| Imugene Limited<br>Director Option Holdings | Options | % |
|---|---|---|
| Ms. Leslie Chong | 77,098,765 | 11.7% |
| Mr. Paul Hopper | 25,827,281 | 3.9% |
| Mr. Charles Walker | 448,456 | 0.1% |
| Dr. Axel Hoos | 15,000,000 | 2.3% |
| Mr. Jens Eckstein | - | 0.0% |
| Dr. Leslie Russell | - | 0.0% |
| **Total** | **118,374,502** | **18.0%** |
| **Total issued options** | 657,774,240 | 100.0% |

*Source: The FY19 financial statements of Imugene*

## 6.4 Statements of financial position

6.4.1 Imugene's statements of financial position as at 30 June 2017, 30 June 2018 and 30 June 2019 are presented in the table below.

Table 10

| Imugene Limited<br>Consolidated statement of financial position | 30-Jun-17<br>Audited<br>$ | 30-Jun-18<br>Audited<br>$ | 30-Jun-19<br>Audited<br>$ |
|---|---|---|---|
| **Current assets** | | | |
| Cash at bank | 4,814,200 | 7,822,057 | 19,047,914 |
| Trade and other receivables | 1,217,403 | 1,914,707 | 4,215,170 |
| Other current assets | 22,654 | 96,207 | 160,485 |
| | 6,054,257 | 9,832,971 | 23,423,569 |
| **Non-current assets** | | | |
| Other financial assets | 20,306 | 20,306 | 50,000 |
| Property, plant and equipment | 3,247 | 3,898 | 233,095 |
| Intangible assets | 6,599,755 | 7,057,100 | 7,057,100 |
| Other non-current assets | - | - | 15,593 |
| | 6,623,308 | 7,081,304 | 7,355,788 |
| **Total assets** | **12,677,565** | **16,914,275** | **30,779,357** |
| **Current liabilities** | | | |
| Trade and other payables | 232,041 | 342,534 | 2,233,212 |
| Employee benefit obligations | 65,452 | 95,706 | 131,804 |
| Other current liabilities | - | - | 58,590 |
| | 297,493 | 438,240 | 2,423,606 |
| **Non-current liabilities** | | | |
| Other financial liabilities | 985,450 | 985,450 | 985,450 |
| Employee benefit obligations | - | 15,106 | 11,272 |
| Other liabilities | - | - | 64,306 |
| | 985,450 | 1,000,556 | 1,061,028 |
| **Total liabilities** | **1,282,943** | **1,438,796** | **3,484,634** |
| **Net assets** | **11,394,622** | **15,475,479** | **27,294,723** |
| **Equity** | | | |
| Share capital | 36,335,357 | 44,285,931 | 63,122,493 |
| Share-based payment reserve | 1,202,024 | 299,945 | 988,945 |
| Accumulated losses | (26,142,759) | (29,110,397) | (36,816,715) |
| | **11,394,622** | **15,475,479** | **27,294,723** |

*Source: The FY18 and FY19 financial statements of Imugene*

## 6.5 Financial performance

6.5.1 Imugene's consolidated statements of profit and loss for the periods ended 30 June 2017, 30 June 2018 and 30 June 2019 are presented in the table below.

Table 11

| Imugene Limited<br>Consolidated statement of profit & loss | FY17<br>Audited<br>$ | FY18<br>Audited<br>$ | FY19<br>Audited<br>$ |
|---|---|---|---|
| **Revenue** | | | |
| Other income | 1,164,049 | 1,840,786 | 4,127,281 |
| Other gains/(losses) | (21,151) | (90,827) | 77,607 |
| | **1,142,898** | **1,749,959** | **4,204,888** |
| **Less Expenditure** | | | |
| Accounting and audit | - | (207,103) | (217,137) |
| Business development | (196,235) | - | - |
| Commercialisation expenses | (122,452) | - | - |
| Consulting | - | (102,849) | (91,043) |
| Corporate administration expenses | (894,055) | - | - |
| Employee benefits | - | (1,083,171) | (1,825,389) |
| Insurance | - | (41,858) | (89,680) |
| Investor relations | - | (140,767) | (426,252) |
| Legal | - | (31,675) | (84,192) |
| Listing and share registry | - | (100,210) | (203,169) |
| Patent costs | - | (196,600) | (207,337) |
| Recruitment and staff training | - | (26,273) | (59,422) |
| Research and development expenses | (2,472,156) | (3,224,121) | (7,611,683) |
| Share-based payments | - | (84,415) | (774,471) |
| Superannuation | - | (44,732) | (69,312) |
| Travel and entertainment | - | (455,924) | (582,414) |
| Other | - | (35,549) | (84,273) |
| **EBITDA** | **(2,542,000)** | **(4,025,288)** | **(8,120,886)** |
| Depreciation expense | - | (2,680) | (63,259) |
| **EBIT** | **(2,542,000)** | **(4,027,968)** | **(8,184,145)** |
| Interest income | 35,429 | 94,327 | 414,893 |
| Finance costs | - | - | (6,108) |
| Income tax expense | - | - | - |
| **Loss for the period** | **(2,506,571)** | **(3,933,641)** | **(7,775,360)** |
| **Other comprehensive income** | | | |
| Other comprehensive income for the period, net of tax | - | - | - |
| **Total comprehensive loss for the period** | **(2,506,571)** | **(3,933,641)** | **(7,775,360)** |

Please note - there have been some changes in classification of expenditure in the financial statements for the financial periods disclosed in the table above. As a result this has involved adjusting prior year comparative figures to match the most recent data where available, as the reclassification occurred in FY19, FY18 comparative figures were available but not FY17.

*Source: The FY18 and FY19 financial statements of Imugene*

## 6.6 Cash flow statements

6.6.1 Imugene's consolidated statements of cash flows for the periods ended 30 June 2017, 30 June 2018 and 30 June 2019 are presented in the table below.

Table 12

| Imugene Limited<br>Consolidated statement of cash flows | FY17<br>Audited<br>$ | FY18<br>Audited<br>$ | FY19<br>Audited<br>$ |
|---|---|---|---|
| **Cash flows from operating activities** | | | |
| Payments to suppliers and employees | (4,006,191) | (5,644,802) | (9,777,806) |
| Research and development tax incentive | 1,297,738 | 1,136,765 | 1,868,316 |
| **Net cash (outflow) from operating activities** | **(2,708,453)** | **(4,508,037)** | **(7,909,490)** |
| **Cash flows from investing activities** | | | |
| Payments for financial assets at amortised cost | - | - | (50,000) |
| Payments for property, plant and equipment | (2,034) | (3,331) | (128,387) |
| Payments for intellectual property | - | (457,345) | - |
| Payments for other current assets | - | - | (15,593) |
| Proceeds from sale of assets at amortised cost | - | - | 20,306 |
| Payments for term deposits | (306) | - | - |
| Payments for rental deposits | - | - | - |
| Interest received | 35,429 | 47,777 | 421,066 |
| **Net cash inflow / (outflow) from investing activities** | **33,089** | **(412,899)** | **247,392** |
| **Cash flows from financing activities** | | | |
| Proceeds from issues of shares and other equity securities | 6,248,806 | 8,778,191 | 20,264,094 |
| Capital raising costs | (320,674) | (848,108) | (1,443,960) |
| Principal elements of lease payments | - | - | (41,143) |
| Interest paid | - | (1,290) | (6,108) |
| **Net cash inflow from financing activities** | **5,928,132** | **7,928,793** | **18,772,883** |
| **Net increase in cash and cash equivalents** | **3,252,768** | **3,007,857** | **11,110,785** |
| Cash and equivalents at the beginning of the financial period | 1,582,583 | 4,814,200 | 7,822,057 |
| Effects of exchange rate changes on cash and equivalents | (21,151) | - | 115,072 |
| **Cash and cash equivalents at end of the financial period** | **4,814,200** | **7,822,057** | **19,047,914** |

Please note - there have been some minor changes in classifications for the FY18 figures in the FY19 financial statements. As a result this has involved adjusting prior year comparative figures to match the most recent data where available, it only impacted FY18.

*Source: The FY18 and FY19 financial statements of Imugene*

## 7. Assessment of the value of an Imugene share

### 7.1 Value definition

7.1.1 PKF Corporate's valuation of Imugene is on the basis of 'fair market value', defined as:

*'the price that could be realised in an open market over a reasonable period of time given the current market conditions and currently available information, assuming that potential buyers have full information, in a transaction between a willing but not anxious seller and a willing but not anxious buyer acting at arm's length'.*

### 7.2 Valuation methodologies

7.2.1 We have reviewed the financial information of Imugene and there is no suggestion that it will not continue in business and, as such, the valuation of Imugene has been prepared on the premise of a going concern.

7.2.2 In selecting appropriate valuation methodologies, we considered the applicability of a range of generally accepted valuation methodologies. These included:

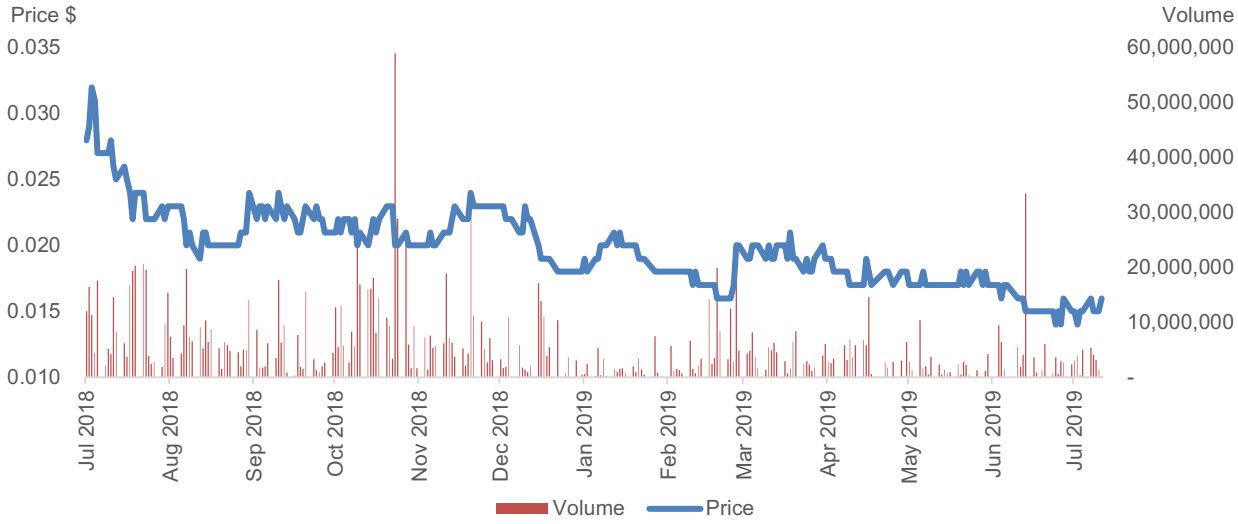
- share price history;
- capitalisation of future maintainable earnings;
- net present value of future cash flows;
- asset based methods;
- comparable market transactions; and
- alternate acquirer.

### 7.3 Share price history

7.3.1 The share price history valuation methodology values a company based on the past trading in its shares. We normally analyse the share prices up to a date immediately prior to the date when a takeover, merger or other significant transaction is announced to remove any price speculation or price escalations that may have occurred subsequent to the announcement of the Proposed Transaction.

7.3.2 As the share price history of Imugene will incorporate all publicly available information, we consider that the share price history is an appropriate methodology to consider in assessing the value of Imugene.

7.3.3 We note that the Proposed Transaction was announced to the ASX on 15 July 2019 and since the announcement, the share market has had an opportunity to evaluate the Proposed Transaction and adjust the price of Imugene accordingly. As a result, we have analysed the share price up to the date of the announcement.




*Source: Yahoo finance*

7.3.4 The graph above shows the daily closing share price and volume of shares traded over the past 12 months from 1 July 2018 to 12 July 2019. We note that over this period the Imugene share price has been trending downwards. We have identified the following ASX announcements:

Table 13

| Date | IMU headline announcements between 1 July 2018 and the date of the announcement |
|---|---|
| 23-Jul-18 | PD-1 cancer vaccine development update |
| 31-Jul-18 | Appendix 4C - Quarterly and Business Update |
| 31-Aug-18 | Appendix 4E and Audited Financial Report |
| 11-Sep-18 | Imugene Completes Phase 1b Cancer Vaccine Trial Recruitment |
| 21-Sep-18 | Imugene commences cGMP manufacture of PD-1 cancer vaccine |
| 30-Oct-18 | Appendix 4C - quarterly |
| 9-Nov-18 | Imugene Receives $1.85 million R&D Tax Incentive |
| 13-Nov-18 | Imugene Advances to Phase 2 in Gastric Cancer Trial |
| 17-Dec-18 | IMU Meets Endpoints in Phase 1b Gastric Cancer Trial |
| 10-Jan-19 | Investor Presentation |
| 30-Jan-19 | Appendix 4C - Quarterly and Business Update |
| 28-Feb-19 | Half Yearly Report and Accounts |
| 28-Feb-19 | Pause in Trading |
| 28-Feb-19 | Imugene Announces Presentation on HER-Vaxx at the AACR 2019 |
| 4-Mar-19 | IMU Announces Presentations on KEY-Vaxx and B-Vaxx at AACR |
| 14-Mar-19 | Imugene doses first patient in HER-Vaxx phase 2 trial |
| 20-Mar-19 | IMU Pre-IND FDA Meeting Provides Guidance for KEY-Vaxx |
| 2-Apr-19 | IMU presents new KEY-Vaxx and B-Vaxx data at AACR |
| 2-Apr-19 | IMU presents positive new HER-Vaxx data at AACR |
| 3-Apr-19 | IMU presents new mimotope PD-1 vaccine data at AACR |
| 16-Apr-19 | Appendix 4C - Quarterly and Business Update |
| 8-Jul-19 | New HER-Vaxx Cancer Vaccine trial data presented at ESMO GI |
| 15-Jul-19 | Investor Presentation - Proposed Acquisition |
| 15-Jul-19 | IMU Enhances Portfolio with Compelling Oncolytic Virus |

*Source: ASX*

7.3.5 In the table below we have analysed the share price and volume traded.

Table 14

| Shares traded | | | | Share price | |
|---|---|---|---|---|---|
| Period | Number | Value $ | VWAP $ | Low $ | High $ |
| 1 Week | 14,009,433 | 215,609 | 0.015 | 0.015 | 0.016 |
| 2 weeks | 28,494,715 | 429,080 | 0.015 | 0.014 | 0.016 |
| 3 weeks | 39,078,300 | 584,092 | 0.015 | 0.014 | 0.016 |
| 1 month | 88,630,482 | 1,331,465 | 0.015 | 0.014 | 0.016 |
| 2 months | 134,628,832 | 2,104,841 | 0.016 | 0.014 | 0.018 |
| 3 months | 201,588,236 | 3,285,174 | 0.016 | 0.014 | 0.019 |
| 6 months | 460,664,469 | 8,006,272 | 0.017 | 0.014 | 0.021 |
| 12 months | 1,453,282,157 | 29,341,481 | 0.020 | 0.014 | 0.026 |

*Source: Yahoo finance and PKF analysis*

7.3.6 We note that the volume of shares traded in the month prior to the announcement represented 2.5% of the shares on issue, in the 6 months prior to the announcement 12.8% and in the 12 months prior to the announcement 40.3% of the shares on issue were traded respectively. Due to the proportion of shares traded we consider the share price to be sufficiently liquid to consider a share priced based valuation.

7.3.7 Based on the above information, the more recent share transactions in Imugene have traded between 1.4 cents and 1.6 cents per share with the volume weighted average price ("VWAP") being 1.5 cents for the 1, 2 and 3 weeks as well as the 1 month prior to the announcement. We therefore consider that up to the time immediately prior to the announcement of the Proposed Transaction 1.5 cents per share was the market's determination of value.

7.3.8 Share prices reflect trades of small parcels of shares that do not incorporate a control premium. A control premium represents the difference between the price that would have to be paid for a share to which a controlling interest attaches and the price at which a share which does not carry with it control of the company could be acquired. The actual control premium paid is transaction specific and depends on a range of factors, such as the level of synergies available to the purchaser, the level of competition for the assets and the strategic importance of the assets.

7.3.9 Given that Imugene's share register is relatively open (the top 20 shareholders account for 26.0% as noted in Table 5), we have deemed it appropriate to add a control premium.

7.3.10 In assessing the control premium to be applied to the minority share price selected in paragraph 7.3.7, we have relied on the relevant matrix from the 'RSM Control Premium Study – 2017' applicable to Imugene and we have summarised this research in the table below.

Table 15

| Analysis by | Criteria | Control premium 20 days pre-announcement | |
|---|---|---|---|
| | | Average | Median |
| All transactions | | 34.50% | 27.00% |
| Industry | Health Care | 41.20% | 26.80% |
| Consideration type | Cash | 36.90% | 29.60% |
| Toehold prior to announcement | - | 29.85% | 22.81% |
| Size | $50m - $100m | 37.00% | 30.20% |

*Source: RSM Control Premium Study – 2017*

7.3.11 We note that the above research sets out statistical information about control premia paid and, as such, includes an unknown uplift on account of potential acquisition synergy benefits. We are of the opinion that the control premium for a transaction that did not include expected synergies would be lower than those in the table above. Accordingly, we have applied a control premium in the range of 20% to 27% to the share price of Imugene to determine the share price on a 'control basis'. The results are set out in the table below.

Table 16

| Control premium | Share price Average |
|---|---|
| 0% | 0.015 |
| 20% | 0.018 |
| 27% | 0.019 |

*Source: PKF analysis*

7.3.12 After application of the information above this results in a share price range of **1.8 cents to 1.9 cents per share**.

### 7.4 Capitalisation of future maintainable earnings

7.4.1 Capitalisation of earnings is a method commonly used for valuing manufacturing and service companies and, in our experience, is the method most widely used by purchasers of such businesses. This method involves capitalising the earnings of a business at a multiple which reflects the risks of the business and its ability to earn future profits. There are different definitions of earnings to which a multiple can be applied. The traditional method is to use net profit after tax. Another common method is to use Earnings Before Interest and Tax, or EBIT. One advantage of using EBIT is that it enables a valuation to be determined which is independent of the financing and tax structure of the business. Different owners of the same business may have different funding strategies and these strategies should not alter the fundamental value of the business.

7.4.2 As Imugene does not have a history of profitable trading, we consider that the capitalisation of maintainable earnings is not an appropriate methodology to use to value the Imugene shares.

### 7.5 Net present value of future cash flows

7.5.1 An analysis of the net present value of the projected cash flows of a business and/or asset (or discounted cash flow technique) is based on the premise that the value of the business and/or asset is the net present value of its future cash flows. This methodology requires an analysis of future cash flows, the capital structure and costs of capital and an assessment of the residual value of the business and/or asset remaining at the end of the forecast period.

7.5.2 Imugene generated negative cash flows from operations during the financial years ended 30 June 2017, 2018 and 2019 (refer to Section 6.6 of this report) and it does not currently generate any operating revenues.

7.5.3 Imugene's major assets are intangible but do not currently generate revenue and are not expected to in the near future. Accordingly, Imugene cannot be valued using the net present value of the future cash flows methodology given the intangible assets are not currently producing operating revenue and there is insufficient certainty as to the cash flows that may be derived from these assets in the future. Imugene does not have any long term cash flow forecasts.

7.5.4 As we have not been able to develop our own cash flow forecasts for Imugene. We engaged Acuity to conduct a valuation of Imugene's intangible assets, and in conducting this valuation, Acuity prepared its own risk adjusted forecasts for Imugene which it utilised in adopting this methodology. A copy of Acuity's report is set out in Attachment 1.

## 7.6 Asset based methods

7.6.1 This methodology is based on the realisable value of a company's identifiable net assets. Asset based valuation methodologies include:

(a) Net assets

The net asset valuation methodology involves deriving the value of a company or business by reference to the value of its assets. This methodology is likely to be appropriate for a business whose value derives mainly from the underlying value of its assets rather than its earnings, such as property holding companies and investment businesses that periodically revalue their assets to market. The net assets on a going concern basis method estimates the market values of the net assets of a company but does not take account of realization costs.

The net assets of Imugene as at 30 June 2019 as per the audited financial statements were $27,294,723 (refer to Section 6.4 of this report). Imugene's major assets are intangible, the largest component of which relates to Biolife/HER-Vaxx which has been carried at cost since acquisition on 20 December 2013. In addition to this intangible asset, Imugene has also recognised PD-1 and Non PD-1 which relate to licence fees paid to purchase a body of cancer vaccine work and related intellectual property.

The ultimate recoverability of these costs carried forward is dependent on the successful development and commercial exploitation, or the sale of the respective technologies. Accordingly, the book value of Imugene's intangible assets may not reflect the market value of these assets.

In light of this we have engaged Acuity Technology Management Pty Ltd ("Acuity") to assist us in assessing the value of Imugene's intangible assets. A full copy of Acuity's technical valuation report is set out as Attachment 1 to this report. We have reviewed Acuity's technical valuation report and provide in the table below an extract of the intangible asset valuation.

Table 17

| **Imugene Limited**<br>**Acuity valuation** | **$** |
|---|---|
| Valuation of Imugene's intangible assets | |
| Low | 99,600,000 |
| High | 149,800,000 |
| **Preferred value** | **124,500,000** |

*Source: Acuity*

As can be seen from the table above, Acuity has provided a preferred technical value of $124.5m in relation to the intangible assets of Imugene with a range of $99.6m to $149.8m, which represents 20% above and below the preferred value. In our opinion, the provision of a single value does not appropriately reflect the uncertainty inherent in any valuation, therefore we consider provision of a range to be appropriate.

The value of intangible assets summarised above has been assessed by Acuity, however should the intangible assets be sold then the disposal will create a tax obligation. Therefore, in the table below, we have considered the impact of such an event. This assessment includes deducting the cost base of intangible assets acquired, as disclosed in the FY19 financial statements and also the accumulated tax losses.

Table 18

| Imugene Limited<br>Intangible assets - tax impact | $ |
|---|---|
| Valuation determined by Acuity | 124,500,000 |
| Assumed cost based of intangible assets | (7,057,100) |
| Assumed gain if sold | 117,442,900 |
| | |
| Tax losses accumulated | (18,784,791) |
| Assumed gain net of tax losses accumulated | 98,658,109 |
| | |
| Tax rate applicable to Imugene | 30.0% |
| **Assumed deferred tax** | **29,597,433** |

*Source: Acuity, FY19 financial statements of Imugene and PKF analysis*

The table below shows the adjustments reflecting the valuation of the intangible assets determined by Acuity and the corresponding tax liability. Part 1 of Table 19 shows the adjustment to remove the book value and Part 2 shows the valuation of intangible assets and the corresponding deferred tax liability.

Table 19

| Imugene Limited<br>Financial Position | 30-Jun-19<br>Audit<br>$ | Adjustments<br>Part 1<br>$ | Adjustments<br>Part 2<br>$ | Post<br>Adjustments<br>$ |
|---|---|---|---|---|
| **Current assets** | | | | |
| Cash at bank | 19,047,914 | | | 19,047,914 |
| Trade and other receivables | 4,215,170 | | | 4,215,170 |
| Other current assets | 160,485 | | | 160,485 |
| | 23,423,569 | - | - | 23,423,569 |
| **Non-current assets** | | | | |
| Other financial assets | 50,000 | | | 50,000 |
| Property, plant and equipment | 233,095 | | | 233,095 |
| Intangible assets | 7,057,100 | (7,057,100) | 124,500,000 | 124,500,000 |
| Other non-current assets | 15,593 | | | 15,593 |
| | 7,355,788 | (7,057,100) | 124,500,000 | 124,798,688 |
| **Total assets** | **30,779,357** | **(7,057,100)** | **124,500,000** | **148,222,257** |
| **Current liabilities** | | | | |
| Trade and other payables | 2,233,212 | | | 2,233,212 |
| Employee benefit obligations | 131,804 | | | 131,804 |
| Other current liabilities | 58,590 | | | 58,590 |
| | 2,423,606 | - | - | 2,423,606 |
| **Non-current liabilities** | | | | |
| Other financial liabilities | 985,450 | | | 985,450 |
| Employee benefit obligations | 11,272 | | | 11,272 |
| Deferred tax liabilities | - | - | 29,597,433 | 29,597,433 |
| Other liabilities | 64,306 | | | 64,306 |
| | 1,061,028 | - | 29,597,433 | 30,658,461 |
| **Total liabilities** | **3,484,634** | **-** | **29,597,433** | **33,082,067** |
| **Net assets** | **27,294,723** | **(7,057,100)** | **94,902,567** | **115,140,190** |
| **Equity** | | | | |
| Share capital | 63,122,493 | | | 63,122,493 |
| Share-based payment reserve | 988,945 | | | 988,945 |
| Accumulated losses | (36,816,715) | (7,057,100) | 94,902,567 | 51,028,752 |
| | **27,294,723** | **(7,057,100)** | **94,902,567** | **115,140,190** |

*Source: Acuity, FY19 financial statements of Imugene and PKF analysis*

After factoring in the valuation of Imugene's intangible assets, the net asset value per share increases, therefore some options on issue will have an exercise price below the value per share; accordingly, the table below shows this calculation. Using a value per share of 3.2 cents (see Table 20 below), we have determined which options have an exercise price equal to or below this value and assumed that these options will be exercised. We have therefore adjusted the net assets by the funds which would be raised from their exercising and also increased the number of shares on issue, then recalculated the value per share.

In addition to this, and as previously mentioned, we consider a range to be appropriate to reflect the inherent uncertainty in any valuation, therefore, and consistent with Acuity, we have applied a range of +/- 20%. This can be seen in the table below.

Table 20

| Imugene Limited<br>Net assets | | Low<br>$ | High<br>$ | $ |
|---|---|---|---|---|
| **Prior to exercising options** | | | | |
| Net assets | | | | 115,140,190 |
| Shares on issue | 3,609,847,749 | | | |
| **Value per share** | | | | **0.032** |
| **Post exercising options** | | | | |
| Net assets | | | | 115,140,190 |
| Funds from exercising options in the money | | | | 6,983,869 |
| Total adjusted net assets | | | | 122,124,059 |
| Shares on issue | 3,609,847,749 | | | |
| Options in the money | 284,456,487 | | | |
| Total adjusted shares | 3,894,304,236 | | | |
| Midpoint value per share | | | | 0.031 |
| Low / High | | - 20% | + 20% | |
| **Value per share** | | **0.025** | **0.038** | |

*Source: FY19 financial statements of Imugene and PKF analysis*

Based on this approach Imugene shares have a net asset value in a range of **2.5 cents per share to 3.8 cents per share**.

(b) Orderly realisation of assets

The orderly realisation of assets method estimates the fair market value by determining the amount that would be distributed to shareholders, after payment of all liabilities including realisation costs and taxation charges that arise, assuming the company is wound up in an orderly manner.

Given Imugene's level of cash assets, we do not consider that an orderly realisation of its assets is an appropriate valuation methodology to use in assessing the value of Imugene shares at this point in time.

(c) Liquidation of assets

The liquidation method is similar to the orderly realisation of assets method except the liquidation method assumes that the assets are sold in a short time frame.

We consider that this methodology is an inappropriate valuation methodology to use as Imugene has existing cash resources.

## 7.7 Comparable market transactions

7.7.1 Industry specific methods estimate market values using rules of thumb for a particular industry. Generally, rules of thumb provide less persuasive evidence of the market value of an asset than other valuation methods because they may not account for specific factors.

7.7.2 We are not aware of any specific rules of thumb to be applied to valuing Imugene and, as such, we are unable to apply this valuation methodology.

### 7.8 Alternate acquirer

7.8.1 The value that an alternative offeror may be prepared to pay to acquire Imugene is a relevant valuation methodology to be considered.

7.8.2 We are not aware of any offers for the Imugene shares and as a result we are unable to apply this valuation methodology.

### 7.9 Conclusion – value of Imugene shares

7.9.1 The valuation methodologies which we have considered are summarised in the table below.

Table 21

| Imugene Limited<br>Valuation Methodology | Section | Low<br>$ | High<br>$ |
|---|---|---|---|
| Share price history | 7.3 | 0.018 | 0.019 |
| Net asset approach | 7.6 | 0.025 | 0.038 |

*Source: PKF analysis*

7.9.2 We note that the share price history methodology has resulted in a lower value range and the net asset approach has generated a higher one; we also note that there is no overlap between the two valuation ranges. We therefore consider the upper range from the share price history and the lower range of the net asset approach to be an appropriate blend between the two methods. Thus, we consider an appropriate valuation to be **1.9 cents to 2.5 cents per share**, with a midpoint of 2.2 cents per share on a control basis.

## 8. Vaxinia – Key Information

### 8.1 Background

8.1.1 Vaxinia was incorporated in December 2018 for the purpose of securing the right to develop and commercialise CF33. Vaxinia does not have any assets other than a relatively small amount of cash reserves, as shown below in Section 8.4.

### 8.2 Directors and key personnel

8.2.1 Paul Hopper is the sole director of Vaxinia. Set out below are the members of the Scientific Advisory Board.

Table 22

| Vaxinia Pty Ltd<br>Directors and management team | Position |
|---|---|
| **Director** | |
| Mr. Paul Hopper | Executive Chairman |
| **Scientific Advisory Board** | |
| Prof. Yuman Fong | Chairman Scientific Advisory Board |
| Mr. Ulrich Lauer | Scientific Advisory Board member |
| Mr. Prasad Adusumilli | Scientific Advisory Board member |
| Dr. Rebecca Auer | Scientific Advisory Board member |
| Mr. James Market | Scientific Advisory Board member |

*Source: Vaxinia reports and data provided*

## 8.3 Share capital

8.3.1 As at the date of this report, Vaxinia had 1,080 ordinary shares on issue; 852 of these shares are owned by interests associated with Mr. Paul Hopper. Details are provided in the table below.

Table 23

| Vaxinia Pty Ltd<br>Shareholders | Shareholding | % |
|---|---|---|
| Alexandra Hopper | 10 | 0.9% |
| Horatia Hopper | 10 | 0.9% |
| India Hopper | 10 | 0.9% |
| Paul Alexander Hopper | 10 | 0.9% |
| Scarlett Hopper | 10 | 0.9% |
| Deborah Coleman | 50 | 4.6% |
| Moreglade Pty Ltd as trustee for the Hopper Super Fund | 752 | 69.6% |
| Leonard Post | 18 | 1.7% |
| Gemmcare | 12 | 1.1% |
| Andrew Banks | 12 | 1.1% |
| Australian Direct Investments | 12 | 1.1% |
| Dylide | 12 | 1.1% |
| Professor Fong | 162 | 15.0% |
| | 1,080 | |
| Parties related to Paul Hopper | 852 | 78.9% |

*Source: The Deed, Vaxinia reports and data provided*

## 8.4 Statements of financial position

8.4.1 Vaxinia's draft statement of financial position as at 30 June 2019 is presented in the table below. As the company was incorporated in December 2018, it does not have prior year figures.

Table 24

| Vaxinia Pty Ltd<br>Statement of financial position | 30-Jun-19<br>Draft<br>$ |
|---|---|
| **Current assets** | |
| Cash and cash equivalents | 631 |
| | 631 |
| **Total assets** | **631** |
| **Current liabilities** | |
| Trade and other payables | 64,902 |
| | 64,902 |
| **Total liabilities** | **64,902** |
| **Net assets** | **(64,271)** |
| **Equity** | |
| Share capital | 28,688 |
| Retained earnings | (92,959) |
| | **(64,271)** |

*Source: Vaxinia's FY19 draft financial statements*

## 8.5 Financial performance

8.5.1 Vaxinia's draft statement of profit and loss for the period ended 30 June 2019 is presented in the table below.

Table 25

| Vaxinia Pty Ltd<br>Statement of profit & loss | FY19<br>Draft<br>$ |
|---|---|
| **Revenue** | - |
| **Less Expenditure** | |
| Bank charges | (31) |
| Computer expenses | (1,111) |
| Consultancy fees | (15,424) |
| Entertainment expenses | (445) |
| Legal costs | (19,298) |
| Printing and stationary | (193) |
| Travelling expenses | (56,458) |
| **EBIT / EBITDA** | **(92,960)** |
| Interest income | - |
| **Net profit (loss)** | **(92,960)** |
| Retained earnings at the beginning of the financial year | - |
| **Retained earnings at the end of the financial year** | **(92,960)** |

*Source: Vaxinia's FY19 draft financial statements*

## 8.6 Cash flow statements

8.6.1 The statement of cash flows was not prepared or included in the draft financial statements for the period ended 30 June 2019.

# 9. Assessment of the value of Vaxinia

## 9.1 Value definition

9.1.1 PKF Corporate's valuation of Vaxinia is on the basis of 'fair market value', as used for Imugene.

## 9.2 Valuation methodologies

9.2.1 We have reviewed the financial information of Vaxinia and consider that as it has a negative net asset position and no existing revenue streams, the valuation of Vaxinia cannot be prepared on the premise of a going concern.

9.2.2 The same valuation methodologies as used in assessing Imugene have been considered below for Vaxinia.

## 9.3 Share price history

9.3.1 Vaxinia is an unlisted company, as such there is no active market in its securities. We understand there have not been any trades in its securities, therefore we have not been able to apply this methodology.

## 9.4 Capitalisation of future maintainable earnings

9.4.1 As previously mentioned, capitalisation of earnings is a method commonly used for valuing businesses currently generating profitable returns. As Vaxinia does not have a history of profitable trading, we consider that the capitalisation of maintainable earnings is not an appropriate methodology to use to value Vaxinia.

## 9.5 Net present value of future cash flows

9.5.1 A cash flow statement for Vaxinia was not available, however we note the company has not generated any revenue and is not expected to generate revenue in the immediate future. Accordingly, this methodology cannot be used to value Vaxinia.

## 9.6 Asset based methods

9.6.1 As previously noted, this methodology is based on the realisable value of a company's identifiable net assets. Asset based valuation methodologies include:

(a) Net assets

The net liabilities of Vaxinia as at 30 June 2019 as extracted from the draft financial statement were $64,271, furthermore Vaxinia has not yet generated revenue and we understand is not expected to in the immediate future. As a result, we consider the orderly realisation of assets to be more appropriate.

(b) Orderly realisation of assets

As previously noted in the assessment of Imugene, the orderly realisation of assets methodology estimates the fair market value by determining the amount that would be distributed to shareholders, after payment of all liabilities including realisation costs and taxation charges that arise, assuming the company is wound up in an orderly manner. The balance sheet of Vaxinia as at 30 June 2019 is shown below.

Table 26

| Vaxinia Pty Ltd<br>Statement of financial position | 30-Jun-19<br>Draft<br>$ |
|---|---|
| **Current assets** | |
| Cash and cash equivalents | 631 |
| | 631 |
| **Total assets** | **631** |
| **Current liabilities** | |
| Trade and other payables | 64,902 |
| | 64,902 |
| **Total liabilities** | **64,902** |
| **Net assets** | **(64,271)** |
| **Equity** | |
| Share capital | 28,688 |
| Retained earnings | (92,959) |
| | **(64,271)** |

*Source: Vaxinia's FY19 draft financial statements and PKF analysis*

As Vaxinia's only asset is cash and cash equivalents, the realisation of these assets is not expected to generate additional value other than that recorded in the balance sheet. Therefore we consider that under this basis, a value of Vaxinia would be nil.

(c) Liquidation of assets

Due to the nature of the assets held by Vaxinia, the realisation of cash and cash equivalents should result in the same benefit whether on a liquidation basis on orderly realisation basis. Therefore we consider the valuation under this basis to be the same as under the orderly realisation of assets methodology.

### 9.7 Comparable market transactions

9.7.1 Industry specific methods estimate market values using rules of thumb for a particular industry. Generally, rules of thumb provide less persuasive evidence of the market value of an asset than other valuation methods because they may not account for specific factors.

9.7.2 We are not aware of any specific rules of thumb to be applied to valuing Vaxinia and, as such, we are unable to apply this valuation methodology.

### 9.8 Alternate acquirer

9.8.1 We understand that a number of parties have approached Vaxinia regarding its acquisition, but this has only been based on it having the right to develop and commercialise CF33. As we understand that right is in the process of being obtained by Imugene from COH, we do not consider this methodology to be appropriate.

### 9.9 Conclusion – value of Vaxinia

9.9.1 We have considered a number of valuation methodologies when assessing Vaxinia. The only methodology considered appropriate was a net asset approach, under which the valuation considered was nil. As a result, we consider the value of Vaxinia on a stand-alone basis to be nil.

9.9.2 However as Imugene is acquiring Vaxinia and will assume its liabilities, we have assessed the value of Vaxinia for the purpose of the Proposed Transaction to be negative $64,271.

## 10. The Licence – Key Information

### 10.1 Background

10.1.1 The Licence relates to the worldwide exclusive right to develop and commercialise CF33. Please refer to Section 2 for further details regarding the terms of the Licence and Attachment 1 for further details regarding CF33.

## 11. Valuation of the Licence

11.1.1 PKF Corporate's valuation of the Licence is on the basis of 'fair market value', as used for Imugene and Vaxinia.

### 11.2 Valuation methodologies

11.2.1 As the Licence is an asset rather than an entity, the methodologies available differ to those used for Imugene and Vaxinia.

11.2.2 Therefore, in selecting appropriate valuation methodologies, we considered the applicability of a range of generally accepted valuation methodologies. These included:

- capitalisation of future maintainable earnings;
- net present value of future cash flows;
- comparable market transactions; and
- alternate acquirer.

## 11.3 Capitalisation of future maintainable earnings

11.3.1 As previously mentioned, capitalisation of earnings is a method commonly used for valuing businesses or assets currently generating profitable returns. As the Licence is still in the testing phases, it does not have a history of generating revenue and is also not expected to begin generating revenue in the near future. Therefore, we consider that the capitalisation of maintainable earnings is not an appropriate methodology to use to value the Licence.

## 11.4 Net present value of future cash flows

11.4.1 Similar to the capitalisation of future maintainable earnings, as revenue has not been generated historically and there is no expectation that revenue will begin to be generated in the near future, we do not consider this methodology appropriate. However, a variant of this methodology was adopted by Acuity in assessing the value of the Licence.

11.4.2 We have engaged Acuity to assist us in assessing the value of the Licence. A full copy of the Acuity technical valuation report is set out as Attachment 1 to this report. We have reviewed the Acuity technical valuation report and provide in the table below an extract of the valuation ascribed to the Licence.

Table 27

| The Licence<br>Acuity valuation | $ |
|---|---|
| Valuation of the Licence | |
| Low | 18,900,000 |
| High | 25,600,000 |
| **Preferred value** | **22,200,000** |

*Source: Acuity*

11.4.3 Similar to the intangible asset valuation performed by Acuity for Imugene, a valuation range has been provided with a preferred technical value at the midpoint. The range applied by Acuity in this instance is 15% above and below the preferred value. As previously stated, in our opinion the provision of a single value does not appropriately reflect the uncertainty inherent in any valuation, therefore we consider a range to be appropriate.

11.4.4 The value of the Licence summarised above has been calculated by Acuity, however should the intangible asset be sold then it would create a tax obligation. Therefore, in the table below, we have considered the impact of such an event. The cost of acquiring the intangible asset is considered to be US$ 3.2m; in addition there are a number of contingent factors which may also become payable. These contingent factors have been included in the assessment of value of the Licence performed by Acuity, we have therefore not included these deferred components in the assessment of the cost base[2]. The costs consist of three equal tranches of US$ 1m to be paid in 2019, 2020 and 2021, plus costs incurred by COH totalling US$ 192,578 are to be reimbursed by Imugene, thus resulting in the total of US$ 3.2m. These costs have been translated into Australian Dollars at the exchange rate on 8 October 2019[3], resulting in a cost base of the intangible assets of $4,739,079.

Table 28

| The Licence<br>Net value after tax | $ |
|---|---|
| Valuation determined by Acuity | 22,200,000 |
| Assumed cost based of intangible assets | (4,739,079) |
| Assumed gain if sold | 17,460,921 |
| | |
| Tax rate applicable | 30.0% |
| Assumed deferred tax | 5,238,276 |
| | |
| **Net value after tax** | **16,961,724** |

*Source: Acuity and PKF analysis*

[2] It should be noted that Acuity's valuation of the Licence incorporates the contingent consideration (section 5.2.1 of Acuity's report).
[3] The exchange rate on 8 October 2019 was sourced from xe.com.

11.4.5 Similarly to the approach applied in assessing Imugene and in light of the range identified by Acuity, we considered a range should be applied in the assessment of the Licence. We have used the same range of 15% above and below the midpoint as used by Acuity in assessing the net asset range, this is shown in the table below.

Table 29

| The Licence Valuation | $ |
|---|---|
| Net value after tax | 16,961,724 |
| **Low ( - 15%)** | **14,417,465** |
| **High ( + 15%)** | **19,505,982** |

*Source: PKF analysis*

11.4.6 Based on this valuation methodology, the value of the Licence is in a range of say $14.4 to $19.5 million.

### 11.5 Comparable market transactions

11.5.1 Industry specific methods estimate market values using rules of thumb for a particular industry. Generally, rules of thumb provide less persuasive evidence of the market value of an asset than other valuation methods because they may not account for specific factors.

11.5.2 We are not aware of any specific rules of thumb to be applied to valuing the Licence and, as such, we are unable to apply this valuation methodology.

### 11.6 Alternate acquirer

11.6.1 We understand that a number of parties have made offers to secure the right to develop and commercialise CF33. We have not been provided with details of these offers as we understand that they are each subject to non-disclosure agreements. As a result, we have not been able to include details of these offers or use these as methods of valuation.

### 11.7 Conclusion – value of the Licence

11.7.1 In assessing the value of the Licence, we have considered a number of valuation methodologies. Of those assessed, the only methodology considered appropriate was the net present value methodology applied by Acuity. Based on this methodology we conclude the value of the Licence is in the range of **$14.4 to $19.5 million**.

## 12. Valuation of Imugene after the Proposed Transaction

12.1 The value of Imugene after the Proposed Transaction comprises:

- the value of Imugene before the Proposed Transaction; plus
- the value of Vaxinia; plus
- the value of the Licence; less
- the cost of acquiring Vaxinia; less
- the cost of the Licence; less
- the cost of securing the right to the Licence.

We note that the acquisition of Vaxinia and securing the Licence are contingent on each other, therefore if one does not happen the other can't either, this was previously defined as part of the "Proposed Transaction". Therefore, in this section we have assessed the Proposed Transaction as one, rather than separating out the components. Furthermore, we note that the Proposed Transaction includes deferred consideration should certain milestones be achieved, as discussed earlier in Section 2.

12.2 We have assessed the value of Imugene after the Proposed Transaction on a control basis, as set out in the table below.

Table 30

| Imugene Limited, Vaxinia Pty Ltd and Licence Value | Section | Low $ | High $ |
|---|---|---|---|
| **Imugene** | | | |
| Number of shares (adjusted) | | 3,894,304,236 | 3,894,304,236 |
| Value per share | 7.9 | 0.019 | 0.025 |
| Value | | 73,991,780 | 97,357,606 |
| **Vaxinia** | | | |
| Value | 9.9 | (64,271) | (64,271) |
| Cash component of purchase price | | (97,588) | (97,588) |
| | | (161,859) | (161,859) |
| **Licence** | | | |
| Value | 11.7 | 14,400,000 | 19,500,000 |
| Purchase price | 11.4.4 | (4,739,079) | (4,739,079) |
| | | 9,660,921 | 14,760,921 |
| **Value - Imugene after the Proposed Transaction** | | **83,490,842** | **111,956,668** |

*Source: PKF analysis*

12.3 The table above shows the value range of Imugene after the Proposed Transaction. Please note, as discussed in Section 7.6, the value of Imugene shares exceeds the exercise price of some options. Therefore, for the assessment in Section 7.6 we assumed that options which have an exercise price equal to or below the value would be exercised. Correspondingly we have used this adjusted number of shares in our calculations.

12.4 In the table below, the value per share has been calculated after the Proposed Transaction. The number of shares has been adjusted for those which would be issued to Vaxinia shareholders as part of the Proposed Transaction.

Table 31

| Imugene after the Proposed Transaction Value per share | Low | High |
|---|---|---|
| **Value of Imugene ($)** | 83,490,842 | 111,956,668 |
| Number of shares (adjusted) | 3,894,304,236 | 3,894,304,236 |
| Shares issued to Vaxinia shareholders | 127,994,355 | 127,994,355 |
| | 4,022,298,591 | 4,022,298,591 |
| **Value per share ($)** | **0.021** | **0.028** |

*Source: PKF analysis*

12.5 However, the table above excludes the milestone shares (Table 1). In the table below, the number of shares has been shown should the Proposed Transaction occur. This includes the shares that are to be issued to the Vaxinia shareholders as part of the Proposed Transaction, excluding the milestone shares. In addition, below this the milestone shares have also been listed. These shares will only be issued if the respective milestones are achieved.

Table 32

| Imugene after the Proposed Transaction | Shares |
|---|---|
| Shares immediately after the Proposed Transaction, excluding milestone shares | |
| Number of shares (adjusted) | 3,894,304,236 |
| Shares issued to Vaxinia shareholders, excluding milestone shares | 127,994,355 |
| | **4,022,298,591** |
| Potential shares under milestones | |
| Milestone 1 | 119,354,838 |
| Milestone 2 | 134,258,064 |
| Milestone 3 | 149,193,548 |
| | **402,806,450** |

*Source: PKF analysis, the Deed and Imugene's share register*

12.6 As previously mentioned, the issuing of the milestone shares is contingent on certain milestones in relation to the development of CF33 being achieved in the future. The probabilities of these milestones being achieved as well as their potential timing are difficult to determine, however both factors have been estimated by Acuity; as a result we have used these assessments in our calculations. (Please note, these assessments have been sourced from the supporting documentation to Acuity's report and summarised in the table below.)

Table 33

| Milestone | Shares | Probability of occurring | | Timing |
|---|---|---|---|---|
| | | Low | High | |
| Milestone 1 | 119,354,838 | 70% | 90% | 1 year |
| Milestone 2 | 134,258,064 | 70% | 90% | 1.5 years |
| Milestone 3 | 149,193,548 | 40% | 62% | 3 years |

*Source: Acuity*

12.7 The estimated timing of the milestones being achieved impacts upon the current value of the deferred consideration, as such the time value of money needs to be reflected. For the purposes of this assessment we have used a rate of 5% per annum and applied it to the time periods estimated by Acuity and summarised in the table above.

12.8 In addition to the timing and probability of the milestones occurring, we have given consideration to the marketability of these rights in comparison to an existing share in Imugene.

12.9 Shares in listed companies are readily marketable and therefore liquid. An investment in a listed company is more valuable than an unlisted company, due to a lack of marketability. Similarly, owners of a right to obtain in the future, shares in a listed company, are also less valuable than shares in a listed company, as there is no ready market for the right. This is due to the owners of the rights not having the ability to quickly, at low cost, and with some degree of certainty, convert the right into cash.

12.10 If the owners of the rights wish to offer them for sale, then we consider that it would involve considerable time and cash resources to do this and for this reason, we have considered the applicability of a lack of marketability discount. After considering the above, we have applied a marketability discount of 25%. This discount reflects the reduced transferability of a right to shares, contingent on future events. The selection of this discount is supported by research emanating from the US[4].

12.11 Further to the marketability discount, the shares in Imugene have voting rights attached, however the rights do not include the ability to vote. There is some empirical evidence derived from listed shares that non-voting shares are valued at a discount of between 5% and 10% compared to voting shares, however, this evidence is based on shares that are permanently non-voting shares. As the rights may convert into voting shares in the future on achieving the respective milestones, then the voting restriction is not indefinite. Accordingly, we are of the opinion that an appropriate discount applied should be at the lower end of the range, or 5%.

[4] Shannon P. Pratt, Business Valuation Discounts and Premiums 2001

12.12 We have incorporated the above factors into our assessment. Our assessment involves attributing a value to the right to the deferred consideration in total, based on the above factors and the price determined in Table 31. This value of the milestone shares was then deducted from value of Imugene as it represents a transfer of value from the current Imugene shareholders to the Vaxinia shareholders. As the deferred consideration consists of Imugene shares, the value of the consideration depends on the value of an Imugene share. This is therefore a circular process and we used iteration to arrive at the values set out below.

Table 34

| Imugene after the Proposed Transaction | Low | High |
|---|---|---|
| Value of Imugene ($) | 83,490,842 | 111,956,668 |
| Less value attributed to milestone shares ($) | (3,244,504) | (8,278,421) |
| | 80,246,339 | 103,678,247 |
| Number of shares (adjusted) | 3,894,304,236 | 3,894,304,236 |
| Shares issued to Vaxinia shareholders | 127,994,355 | 127,994,355 |
| | 4,022,298,591 | 4,022,298,591 |
| **Value per share ($)** | **0.020** | **0.026** |

*Source: PKF analysis*

12.13 Based on this assessment, in our opinion, after completion of the Proposed Transaction, the value of an Imugene share will be in the range of say 2.0 cents to 2.6 cents, with a midpoint of 2.3 cents per share on a control basis.

## 13. Assessment as to Fairness

13.1 The Proposed Transaction is 'fair' if the value of the shares held by the Non-Associated Shareholders in Imugene after the Proposed Transaction is equal to or greater than the value of the shares in Imugene before the Proposed Transaction.

13.2 In Section 7 we assessed the value of an Imugene share on a control basis before the Proposed Transaction to be in the range of 1.9 to 2.5 cents per share with a midpoint of 2.2 cents per share.

13.3 In Section 12 we assessed the value of an Imugene share on a control basis after the Proposed Transaction to be in the range of 2.0 to 2.6 cents per share with a midpoint of 2.3 cents per share.

13.4 As the value of an Imugene share after the Proposed Transaction of 2.3 cents per share is greater than the value of an Imugene share prior to the Proposed Transaction of 2.2 cents per share, we have concluded that the Proposed Transaction is **fair**.

## 14. Assessment as to Reasonableness

14.1 Prior to deciding whether to approve or reject the Proposed Transaction, the Imugene shareholders should also consider the following significant factors:

- In Section 13 we assessed the Proposed Transaction to be fair.
- In Section 7.3 of this report, we analysed the share price of Imugene before the announcement of the Proposed Transaction and we concluded that the Imugene shares had a market value of $0.015 per share. We note that the VWAP of Imugene shares since the Proposed Transaction was announced is $0.022 per share. There is therefore evidence that the share market has viewed the Proposed Transaction as value accretive for the Imugene shareholders. If shareholders do not approve the Proposed Transaction, the share price may return to the levels at which the shares were trading prior to the announcement of the Proposed Transaction.

- The acquisition of the Licence will provide Imugene with access to an additional and promising technology. Adding further technologies to Imugene's portfolio of assets should act to reduce the risk of failure of any one of Imugene's technologies.

- The Licence requires Imugene to expend significant cash resources on the development of the licenced technology. This may divert available resources away from Imugene's existing projects.

- The purchase of Vaxinia will result in the issue of additional shares thus diluting current shareholders. Furthermore, should the milestones set out in the agreement be achieved, then additional shares will be issued, further diluting current shareholders.

- The purchase of Vaxinia also includes milestones, the achievement of which trigger the issue of additional shares. Should each milestone be achieved and there are no other share issues or options exercised, the proportion of Imugene's voting power held by Paul Hopper and his associates may increase from 2.1% to 12.1%.

14.2 Based on the above, we consider that the advantages of the Proposed Transaction outweigh the disadvantages of the Proposed Transaction, and for this reason, we consider that the Proposed Transaction is **reasonable** for the Non-Associated Shareholders of Imugene.

## 15. Assessment as to Fairness and Reasonableness

15.1 After considering the above matters, we have concluded that the Proposed Transaction is **fair and reasonable.**

## 16. Related Party – Financial Benefits

16.1 As explained in the Notice of Meeting to which this report is an attachment, the Directors of Imugene have determined to seek shareholder approval for the purpose of Chapter 2E of the Corporations Act to avoid any doubt as to whether or not the financial benefit given is on an arms length basis. In view of the above, we have prepared an assessment of the value of the financial benefit as if the arms length exemption was not applicable.

16.2 Section 229(1)(c) of the Act states that in determining whether a financial benefit is given, the consideration that is given for the benefit (in this case the shares in Vaxinia), is to be disregarded. This means that the benefit given is equal to the value of the consideration paid, without taking into account the value of the Vaxinia shares given in return.

16.3 The total consideration payable by Imugene to the Vaxinia shareholders (excluding the deferred consideration) comprises of a cash payment of $97,588 and the issue of 127,994,355 shares, however Paul Hopper and his associates are not receiving any of the cash consideration as this is only payable to unrelated parties. The consideration payable to Paul Hopper and his associates is limited to 105,955,065 Imugene shares, plus deferred consideration of up to 317,814,289 Imugene shares if certain milestones are achieved, as previously discussed in Section 2.

16.4 In Section 12 we assessed the value of Imugene shares following the Proposed Transaction to be in a range of 2.0 cents to 2.6 cents per share. This value range includes a control premium. In Section 7.3 we adopted a control premium in a range of 20% to 27%. The reciprocal of a control premium is a minority discount. The reciprocal of a control premium of 20% to 27% is a minority discount in a range of 16.5% to 21.25%. The value of the consideration payable to Paul Hopper and his associates can therefore be expressed as follows:

Table 35

| Imugene after the Proposed Transaction<br>Value of related party benefit | Low | High |
|---|---|---|
| Value per Imugene share - control basis ($) | 0.020 | 0.026 |
| Minority discount | 21.25% | 16.50% |
| Value per share without control premium ($) | 0.016 | 0.022 |
| | | |
| **At completion of the Proposed Transaction** | | |
| Number of Imugene shares to be issued to Paul Hopper and associates | 105,955,065 | 105,955,065 |
| **Value of shares to be issued at completion ($)** | **1,668,792** | **2,300,284** |
| | | |
| **Contingent consideration** | | |
| Milestone shares | 317,814,289 | 317,814,289 |
| **Value of deferred consideration ($)** | **2,015,932** | **5,453,948** |
| | | |
| **Total value of related party benefit ($)** | **3,684,724** | **7,754,232** |

*Source: PKF analysis*

16.5 Mr Paul Hopper holds personally 10 Vaxinia shares and together with his associates he holds 852 shares in total. On completion of the Proposed Transaction, Paul Hopper and his associates will receive shares, currently valued in a range of $1,668,792 to $2,300,284. Should the contingent events occur, required for the milestone shares to be issued, then this will result in milestone shares being issued by Imugene. The rights to these shares have been valued to be in a range of $2,015,932 to $5,453,948, resulting in a total related party benefit value in a range of $3,684,724 to $7,754,232.

## 17. Financial Services Guide

17.1 This Financial Services Guide provides information to assist retail and wholesale investors in making a decision as to their use of the general financial product advice included in the above report.

### 17.2 PKF Corporate

17.2.1 PKF Corporate holds Australian Financial Services Licence No. 222050, authorizing it to provide general financial product advice in respect of securities to retail and wholesale investors.

### 17.3 Financial Services Offered by PKF Corporate

17.3.1 PKF Corporate prepares reports commissioned by a company or other entity (“Entity”). The reports prepared by PKF Corporate are provided by the Entity to its members.

17.3.2 All reports prepared by PKF Corporate include a description of the circumstances of the engagement and of PKF Corporate’s independence of the Entity commissioning the report and other parties to the transactions.

17.3.3 PKF Corporate does not accept instructions from retail investors. PKF Corporate provides no financial services directly to retail investors and receives no remuneration from retail investors for financial services. PKF Corporate does not provide any personal retail financial product advice directly to retail investors nor does it provide market-related advice to retail investors.

### 17.4 General Financial Product Advice

17.4.1 In the report, PKF Corporate provides general financial product advice. This advice does not take into account the personal objectives, financial situation or needs of individual retail investors.

17.4.2 Investors should consider the appropriateness of a report having regard to their own objectives, financial situation and needs before acting on the advice in a report. Where the advice relates to the acquisition or possible acquisition of a financial product, an investor should also obtain a product disclosure statement relating to the financial product and consider that statement before making any decision about whether to acquire the financial product.

### 17.5 Independence

17.5.1 At the date of this report, none of PKF Corporate, Mr Paul Lom, Mr Steven Perri nor Mr Alastair Richards have any interest in the outcome of the Proposed Transaction, nor any relationship with Imugene, Vaxinia, COH or any of their directors.

17.5.2 Drafts of this report were provided to and discussed with the management of Imugene and its advisers. Certain changes were made to factual statements in this report as a result of the reviews of the draft reports. There were no alterations to the methodology, valuations or conclusions that have been formed by PKF Corporate.

17.5.3 PKF Corporate and its related entities do not have any shareholding in or other relationship with Imugene that could reasonably be regarded as capable of affecting its ability to provide an unbiased opinion in relation to the Proposed Transaction.

17.5.4 PKF Corporate had no part in the formulation of the Proposed Transaction. Its only role has been the preparation of this report.

17.5.5 PKF Corporate considers itself to be independent in terms of Regulatory Guide 112 issued by ASIC on 30 March 2011.

### 17.6 Remuneration

17.6.1 PKF Corporate is entitled to receive a fee of approximately $44,000 for the preparation of this report. With the exception of the above, PKF Corporate will not receive any other benefits, whether directly or indirectly, for or in connection with the making of this report.

### 17.7 Complaints Process

17.7.1 As the holder of an Australian Financial Services Licence, PKF Corporate is required to have suitable compensation arrangements in place. In order to satisfy this requirement PKF Corporate holds a professional indemnity insurance policy that is compliant with the requirements of Section 912B of the Act.

17.7.2 PKF Corporate is also required to have a system for handling complaints from persons to whom PKF Corporate provides financial services. All complaints must be in writing and sent to PKF Corporate at the above address.

17.7.3 PKF Corporate will make every effort to resolve a complaint within 30 days of receiving the complaint. If the complaint has not been satisfactorily dealt with, the complaint can be referred to the Australian Financial Complaints Authority – GPO Box 3, Melbourne Vic 3000.

Yours faithfully

**PKF Melbourne Corporate Pty Ltd**

**Paul Lom**
Director

**Steven Perri**
Director

## Imugene Limited

## Sources of Information

The key documents we have relied upon in preparing this report are:

- Imugene's Annual Report – 30 June 2018;
- Imugene's Interim Report – 31 December 2018;
- Imugene's Annual Report – 30 June 2019;
- Vaxinia's draft financial statements for the financial period ended 30 June 2019;
- Imugene's draft resolution relating to the Proposed Transaction for the purpose of the Notice of General Meeting;
- Imugene's draft Notice of General Meeting;
- Imugene's share register as at 8 October 2019;
- Imugene's option register as at 8 October 2019;
- Licence agreement entered into as of 8 July 2019 between Imugene and COH;
- Share Sale Deed for the purchase of Vaxinia by Imugene;
- Imugene shareholder announcement titled "Imugene Enhances Portfolio with Compelling Oncolytic Virus from City of Hope, a Cancer Centre in Los Angeles, California", dated 15 July 2019;
- Imugene presentation titled "Proposed Acquisition of Oncolytic Chimeric Poxvirus known as CF33";
- Acuity Technology Management Pty Ltd Independent Technical Specialist report dated July 2019;
- Research data from publicly accessible web sites; and
- Discussions with the management of Imugene.

**Appendix B**

## Imugene Limited

## Declarations, Qualifications and Consents

### 1. Declarations

This report has been prepared at the request of the Directors of Imugene pursuant to Listing Rule 10.1 to accompany the notice of meeting of shareholders to approve the Proposed Transaction. It is not intended that this report should serve any purpose other than as an expression of our opinion as to whether or not the Proposed Transaction is fair and reasonable.

This report has also been prepared in accordance with the Accounting Professional and Ethical Standards Board professional standard APES 225 – Valuation Services.

The procedures that we performed and the enquiries that we made in the course of the preparation of this report do not include verification work nor constitute an audit in accordance with Australian Auditing Standards.

### 2. Qualifications

Mr Paul Lom, director of PKF Corporate, and Mr Alastair Richards, prepared this report. They have been responsible for the preparation of expert reports and are involved in the provision of advice in respect of valuations, takeovers, capital reconstructions and reporting on all aspects thereof.

Mr Lom is a Fellow of Chartered Accountants Australia and New Zealand (CAANZ) and an Accredited Business Valuation Specialist (CA BV Specialist) with more than 35 years experience in the accounting profession. He was a partner of KPMG and Touche Ross between 1989 and 1996, specialising in audit. He has extensive experience in business acquisitions, business valuations and privatisations in Australia and Europe.

Mr Richards is a Member of Chartered Accountants Australia and New Zealand (CAANZ). He has been responsible for the preparation of valuation reports relating to shares and businesses for the purpose of acquisitions, divestments, litigation and taxation.

Mr Steven Perri, a director of PKF Corporate reviewed this report. Mr Perri is a Member of Chartered Accountants Australia and New Zealand (CAANZ) and an Accredited Business Valuation Specialist (CA BV Specialist).

### 3. Consent

PKF Corporate consents to the inclusion of this report in the form and context in which it is included in the Explanatory Memorandum.

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acuity
TECHNOLOGY MANAGEMENT

5 August 2019

The Directors
PKF Melbourne Corporate Pty Ltd
Level 12, 440 Collins Street
Melbourne, VIC 3000

Dear Sirs

## *Independent Valuation Report*

## *Imugene Limited and City of Hope CF33 Intellectual Property*

We have pleasure in presenting our independent valuations of Intellectual Property ("IP") owned by Imugene Limited ("Imugene" or the "Company") and IP it intends licensing from the City of Hope Cancer Center ("COH") in Los Angeles, USA, referred to as CF33. At the same time as it enters into the COH licence, Imugene intends to acquire all outstanding shares in Vaxinia Pty Ltd ("Vaxinia") for cash and the issuance of shares in Imugene. The purchase of Vaxinia and licensing of the CF33 IP are contingent on each other.

The CF33 IP is centred around an oncolytic chimeric pox virus developed by scientists at COH and considered to have potential in the treatment of cancer. The CF33 technology is currently at a pre-clinical stage of development, ie. it has not been evaluated in human clinical trials.

Imugene is a Melbourne-based, Australian Securities Exchange-listed company with a portfolio of projects underpinning the development of vaccines for the treatment of cancer. The Company has rights to IP developed by the Medical University of Vienna, through Biolife Pty Ltd, and the Ohio State Innovation Foundation for product candidates referred to as HER-Vaxx and B-Vaxx as well as a number of earlier stage developments.

The proposed transaction between Imugene and Vaxinia involves a common director and significant shareholder in both companies. PKF Melbourne Corporate Pty Ltd ("PKF") is required to provide an Independent Expert Report ("IER") to be including in a Notice of Meeting to shareholders to present its consideration as to whether the proposed transaction between Imugene and Vaxinia is fair and reasonable to shareholders of Imugene.

PKF requested that Acuity Technology Management Pty Ltd ("Acuity") prepare independent valuations of both the COH CF33 IP rights and the current IP portfolio of Imugene. The following report presents deliberations and opinions by Acuity on the current Imugene technology and its market potential, and a valuation as may exist in an open market between arm's length and unstressed vendor and acquirer. It also includes our assessment and valuation of the CF33 IP. Both valuations are largely premised on the future potential of the products deriving from the respective units of IP using a risk adjusted discounted cash flow analysis.

Our analysis supports an after-tax valuation of $124.5 million for the current Imugene portfolio in the range $99.6 million to $149.4 million and $22.2 million with a range of $18.9 million to $25.6 million for the CF33 rights. In both cases, the valuations assume a scenario in which Imugene develops the various units IP to completion of Phase 2 human studies and then licenses to a large, globally operating pharmaceutical or biotechnology company.

The valuation of Imugene does not include any tangible assets such as cash, laboratory and manufacturing equipment, or usable tax losses available to the Company. While no financial value has been placed on drug inventory held by the Company it is assumed that there is material available for further use in clinical trials. Risks to realising the valuation include insufficient funds to complete development prior to sub-licensing and the non-issuance of certain key patents.

Acuity specialises in the appraisal and valuation of IP and knowledge-based intangible assets. The company has experience in valuing technologies, projects and businesses in a diversity of industries including medical and life sciences, chemistry, process engineering, automotive, mining, environmental, water and wastewater treatment, internet, software, electronics and telecommunications. Details of our qualifications and experience are summarised in Section 7 of the valuation opinion. Further details can be found at www.acuitytechnology.com. The attached report, summarizing our analysis and valuations, was prepared solely by the undersigned, Dr David Randerson, as Managing Director of Acuity.

Any questions relating to the valuation report and its contents should be addressed to the Dr Randerson.

Yours sincerely

D H Randerson, BE, MSc, PhD
Managing Director

## Executive Summary

Acuity Technology Management has examined the rights to Intellectual Property ("IP") owned by the City of Hope Cancer Center ("COH"), referred to as CF33, and to be licensed by Imugene as well as the IP portfolio currently owned or licensed by Imugene. The purpose of the analyses was to support an Independent Expert Report ("IER") being prepared by PKF Melbourne Corporate Pty Ltd ("PKF") to be including in a Notice of Meeting to shareholders to present its consideration as to whether the proposed transaction between Imugene and Vaxinia is fair and reasonable to shareholders of Imugene.

Our analysis of the market potential for the current IP under development by Imugene and the CF33 IP that Imugene intends licensing supports after-tax valuations of approximately $124.5 million[1] and $22.2 million respectively as at June 30, 2019.

The following table summarizes our assessed valuations of the IP assets:

**Table 1: Valuation Opinion as at 30 June 2019**

| | Low | High | Preferred |
|---|---|---|---|
| Imugene | $99.6 mil | $149.4 mil | **$124.5 mil** |
| CF33 | $18.9 mil | $ 25.6 mil | **$ 22.2 mil** |

* This table should be read in conjunction with assumptions outlined in later sections of the report.

Although a number of techniques suitable for valuing intangible assets, and specifically IP, were considered, the principle method used is based on a Net Present Value ("NPV") of free cash flows using revenue forecasts and expenses developed by Acuity and drawing on budgets and other financial information provided by Imugene and Vaxinia. The method is considered the most suitable for intangible assets and In-process Research and Development ("IPR&D") in the medical and pharmaceuticals fields where developmental research may be incomplete and products have yet to be launched or establish a market presence.[2] The financial models are based on cash flow projections that may be achieved following further R&D and commercialisation of the IP with probability and discount rate adjustments based on an examination of risks to the successful completion and market introduction of the products.[3] It is the most commonly used approach within the pharmaceutical sector.

Imugene is in Phase 2 studies with two product candidates, HER-Vaxx and B-Vaxx, and has two others in pre-clinical development, ie. not yet evaluated in human studies. The primary condition in which the HER-Vaxx product is being tested is gastric cancer while B-Vaxx is being tested in multiple solid cancers.

The CF33 oncolytic virus ("OV") platform to be licensed from COH, and the subject of the proposed transaction, may target many cancers including triple negative breast cancer ("TNBC"), non-small cell lung cancer ("NSCLC"), colorectal cancer and melanoma.

The modelling of each product's prospective cash flows starts with the incidence and prevalence of targeted or potentially amenable cancer and determines a market share based on the subsets of patients for whom it may be of benefit and potential competition, and applies an Average Selling Price ("ASP") determined by benchmarking current patented cancer therapies. Development timings and costs draw on knowledge of the drug development process and, once, commercialized, Costs of Goods Sold ("COGS") and Sales, General and Administrative ("SG&A") costs use industry averages from analysis of pharmaceutical and biotechnology annual reports.

[1] Throughout this report, currency is Australian dollars unless otherwise specified.
[2] Aaron AV, Bitton VR (co-chairs), *et al*. Assets Acquired in a Business Combination to be used in Research and Development Activities. AICPA, New York, 2013.
[3] Bogdan B & Villager R. Valuation in Life Sciences: A Practical Guide. Springer Verlag (Berlin), 2007.

Cash flows are risk adjusted using published transitional probabilities for oncology drugs.[4] As HER-Vaxx and B-Vaxx have completed Phase 1 studies and are now in Phase 2 and targeting specific tumours we determined that the products have 9.5% and 15.7% chance of realising revenues of up to US$2,000 million and US$6,000 million respectively. The pre-clinical CF33 platform has likelihoods ranging from 2.5% to 4.0% of a product succeeding to market depending on what indications are selected. The latter's valuation of $19.9 million would be achieved with a peak revenues of around US$2,000 million for the TNBC indication and additional amounts for other cancers. Our analysis considers four potential cancers. The assessed market for CF33 products is significantly higher than for HER-Vaxx due to greater incidences of the diseases considered. The valuations of HER-Vaxx and B-Vaxx are higher than CF33 as they are closer to market and early stage risks, which remain with CF33, have been eliminated.

There are many areas for potential error in predicting future cash flows which relate to the size of the end user populations, selling price, estimates of strength and quality of competition, market introduction timings and penetration rates or market shares. These all impact on the valuation and are difficult to estimate with accuracy at this stage. A premium has been included in the discount rate used to net present value future cash flows to compensate for these unknowns while a sensitivity analysis investigates the effects of key variables where ranges may be applied. The inputs with greatest impact on the valuation are:

- Delays or advancement of clinical development and regulatory approval times, or to sub-licensing;
- Discount rate;
- Addressable market, penetration and average selling price;
- COGS and SG&A costs.

We consider that the proposed range for the IP valuation covers reasonable variances to the inputs. Of lessor relevance are development costs and product manufacturing costs. As a consequence, we have proposed ranges of plus or minus 20% and 15% for Imugene and CF33 respectively.

[4] Thomas DW, Burns J, Audette J, Carroll A, Dow-Hygelund C, Hay M. Clinical Development Success Rates 2006-2015. BIO/Biomedtracker/Amplion June 2016.

This report summarises our investigations and findings in the following sections:

## Glossary

| | |
|---|---|
| ALL | Acute lymphocytic leukemia |
| AMI | Acute myeloid leukemia |
| ASP | Average Selling Price |
| ASX | Australian Securities Exchange |
| BLA | Biologics License Application |
| CAPM | Capital Assets Pricing Model |
| CAR | Chimeric Antigen Receptor |
| CAR-T | Chimeric Antigen Receptor T cell (a treatment modality) |
| COGS | Cost of Goods Sold |
| CRO | Contract Research Organization |
| CTN | Clinical Trials Notification |
| DCF | Discounted Cash Flow |
| EMA | European Medicines Authority |
| EU | European Union |
| EU5 | France, Germany, Italy, Spain and UK |
| EV | Enterprise Value |
| FDA | Food and Drug Administration |
| FY | Fiscal Year (year commencing 1 July and ending 30 June the following year) |
| GMP | Good Manufacturing Practices |
| HER | Human Epidermal Growth Factor Receptor |
| IA | Intangible Asset |
| IARC | International Agency for Research on Cancer |
| IND | Investigational New Drug |
| IP | Intellectual Property |
| IPO | Initial Public Offering |
| IPR&D | In-process Research and Development |
| LOA | Likelihood of Approval |
| NCI | US National Cancer Institute |
| NIH | US National Institutes of Health |
| NME | New Molecular Entity |
| NPV | Net Present Value |
| NSCLC | Non-small Cell Lung Cancer |
| PCT | Patent Cooperation Treaty |
| R&D | Research and Development |
| rNPV | Risk Adjusted Net Present Value |
| SG&A | Sales, General and Administrative costs |
| SOP | Standard Operating Procedure |
| TNBC | Triple Negative Breast Cancer |
| UK | United Kingdom |
| US or USA | United States of America |
| WHO | World Health Organization |

# 1. Background

## 1.1 Imugene Background

Imugene is an Australian Securities Exchange ("ASX") listed company (ASX:IMU) which is developing a number of cancer therapeutic products licensed from the Medical University of Vienna ("MedUni"), Austria, and the Ohio State Innovation Foundation ("OSIF") of Columbus, Ohio, USA. The Company was founded in 2013 to acquire MedUni patents, through acquisition of Biolife Science Limited, the owner of those patents, which underpinned a vaccine against cancer diseases associated with the HER-2/neu oncogene. The vaccine strategy is to induce a polyclonal antibody response with similar anti-tumour properties as the currently available monoclonal antibody trastuzumab (Roche's Herceptin®) in part by selection of an epitope located within the Herceptin® target.

The vaccine is to be delivered in a virosomal carrier which was developed and patented by Pevion Biotech AG of Switzerland and initially licensed to Imugene for use in its products. Imugene has subsequently acquired exclusive rights to the technology in the relevant field with no royalties payable to the originator.

A Phase 1b HER-Vaxx study in metastatic gastric cancer patients overexpressing the HER-2 protein completed enrolment in late 2018 and reported no safety or toxicity issues. All evaluable patients showed increased antibody responses. HER-Vaxx disrupted immune tolerance and stimulated production of polyclonal antibodies specific for the self-HER2 molecule in a dose-dependent fashion. The antibodies were shown to be biologically active, inhibiting HER2 phosphorylation, a key step in HER2 signaling.

The Company is currently in the process of recruiting patients for a Phase 2 clinical program. Patients with HER2-positive metastatic gastric cancer are to be randomized into two arms of either HER-Vaxx plus standard chemotherapy or standard chemotherapy alone. The study began enrolment in March 2019 and is scheduled to complete in 2020.

B-Vaxx has been licensed from Ohio State University through Ohio State Innovation Foundation ("OSIF"). It is, like HER-Vaxx, a peptide cancer vaccine designed to treat tumours that over-express the HER-2/neu receptor, such as gastric, breast, ovarian, lung and pancreatic cancers, by stimulating B cells[5] to produce an effective antibody response to destroy the cancer. The immunotherapy is constructed from two B cell epitopes derived from the extracellular domain of HER-2/neu. The selected epitopes are specific to regions to which the therapeutic monoclonal antibody trastuzumab binds. Pre-clinical studies and a completed Phase 1 study have shown HER-Vaxx stimulates a potent polyclonal antibody response to HER-2/neu resulting in tumour reduction. A Phase 2 study evaluating the activity of B-Vaxx in stomach cancer patients over expressing HER-2/nue is being conducted.

PD1-Vaxx is a B cell peptide cancer vaccine which aims to induce the body to produce polyclonal antibodies that block PD-1/PD-L1 signaling, and thus produce an anticancer effect similar to Keytruda® (Merck & Co), Opdivo® (BristolMeyers Squibb) and the other immune checkpoint inhibitors. It is constructed from a single B cell epitope derived from the extracellular domain of PD-1. PD1-Vaxx is currently being evaluated preclinically with promising results. It outperformed an industry-standard mouse anti-PD-1 antibody in a mouse model of HER2+ colorectal cancer. It is also subject to a licence from Ohio State University.

In mouse studies, PD1-Vaxx combined with B-Vaxx was found to be more effective in reducing tumour growth in a recognized mouse model of colon carcinoma versus either the PD1-Vaxx vaccine alone, or more importantly the positive control gold standard anti-mouse PD-1 monoclonal antibody. The vaccine combination was found to be safe and did not appear to exhibit toxicity or autoimmunity. Imugene is working to evaluate PD1-Vaxx and the combination of PD1-Vaxx and B-Vaxx and their potential efficacies in a range of cancers.

[5] B cells are a type of white blood cell, or lymphocyte, that produce infection fighting antibodies.

## 1.2 City of Hope CF33 Background

The virus, known as CF33, a chimeric poxvirus, is the result of research by Professor Yuman Fong at COH. It is an oncolytic virus, one of many cancer killing viruses. CF33 is a genetically stable double stranded DNA virus of the Poxviridae family, which includes vaccinia. Vaccinia has a track record of safe use in millions of humans as it was the active constituent of the vaccine that eradicated smallpox. Vaccinia has a short well characterised life cycle and spreads rapidly from cell to cell but, importantly, does not integrate into the host's genome. It is highly cytolytic, ie. disrupts cell structure, for a broad range of tumour cell types.

CF33 is a combination of genomic sequences from multiple vaccinia virus strains combined and screened to generate a novel, ie. patentable, cancer treatment that is safer and a more potent virus that other strains.

The oncovirus has potential applications across many cancers, including combinations with CTLA4/PD-1/PD-L1 checkpoint inhibitors or with engineered immune cells. Safety has been demonstrated by COH in several pre-clinical studies and CF33, on completion of the licence with Imugene, will enter Phase 1 clinical trials in early 2020, subject to satisfaction of regulatory requirements. The Company will apply to the US Food and Drug Administration ("FDA") for an Investigational New Drug ("IND") exemption to administer the product to humans in well controlled studies.

CF33 has been shown during its pre-clinical development to not only impact growth of the tumours into which it is injected but also non-injected distant tumours, known as an abscopal effect. It appears that a very low dose of virus is required to kill cancer *in vitro* and *in vivo*.

Two batches of drug, produced under Good Manufacturing Practices ("GMP") guidelines by COH are available for Phase 1 studies and beyond. One batch with CF33 with an engineered PD-L1 is complete, the second batch, CF33 without the engineered PD-L1, has commenced.

CF33 is the subject of an international patent application, PCT/US2017/046163, *Chimeric poxvirus compositions and use thereof*, inventor Y Fong, filed 9 August 2017 (see Table 2). It claims a composition of matter for the oncovirus and, once granted, will have a long term to expiry in 2037. The patent has yet to be examined by any patent office.

## 1.3 Intellectual Property

Imugene has rights to a number of patents which underpin its IP and portfolio projects. Of primary relevance to the valuation are those that are last to expire as, for modelling purposes, these set the horizon for cash flows due to an assumption that the duration of a licence and timeline for receipt of royalties is commonly established through patent terms.

Of relevance to HER-Vaxx is WO2016/164980 which has been granted in Australia, while pending in major market countries, and has expiry date 15 April 2036. Patent extensions are available for pharmaceuticals and market exclusivity for biologics in many jurisdictions around the world. These can extend from five to 12 years. We have not included in our analyses such extensions.

**Table 2: Patents Available to Imugene and Vaxinia**

| Product | Patent Title | Patent Number | Originator | Status | Expiry |
|---|---|---|---|---|---|
| **HER-Vaxx** | Vaccine against cancer diseases that are associated with the HER-2/neu Oncogene | WO02/068474 | Biolife Science | Granted AU, EP, CA, US, IE | 27 Feb 2022 |
| | HER-2/neu multi-peptide vaccine | WO2007/118660 | Biolife Science | Granted AU, EP, IE, CA | 11 Apr 2027 |
| | Multi-epitope vaccine for HER-2/neu-associated cancers | WO2011/020604 | Pevion Biotech | Granted in US, EP | 18 Aug 2030 |
| | A vaccine composition and uses thereof | WO2016/164980 | Biolife Science | Granted AU, SG. Pending other countries | 15 Apr 2036 |
| **B-Vaxx** | Chimeric peptides comprising HER-2 B-cell epitopes and measles virus fusion protein T-cell epitopes | US7,691,396 | OSIF | Granted US, EP | 19 Nov 2026 |
| | HER-1, HER-3 and IGF-1R compositions and uses thereof | WO2014/131019 | OSIF | Granted US | 25 Feb 2034 |
| **PD1-Vaxx** | A vaccine composition and uses thereof | PCT/AU2019/050089 | Imugene | PCT national phases | 7 Feb 2038 |
| | Human PD1 peptide vaccines and uses thereof | WO2018/183488 | OSIF and Mayo Foundation | PCT national phases | 28 Mar 2037 |
| **CF33** | Chimeric poxvirus compositions and uses thereof | WO2018/031694 | COH | PCT National phases | |

There is a single patent application that underpins the CF33 program. It has yet to be granted in any country. It claims viral compositions that comprise therapeutically effective amounts of a chimeric poxvirus that are particularly useful for treating cancer.

## 2. This Report

This valuation report has been prepared at the request of PKF and is to be relied upon by PKF in the preparation of their Independent Experts Report relating to the acquisition of shares in Vaxinia by Imugene and the acquisition of rights to COH's CF33 IP.

The report presents Acuity's deliberations on the Imugene and CF33 technologies and their market potentials along with a valuation in an open market between arm's length and unstressed vendor and acquirer. It is largely premised on the future potential of the HER-Vaxx and B-Vaxx products of Imugene and the application of CF33 to a number of cancers, with benchmarking against comparable entities and transactions to merge or acquire assets, where such comparisons are available. In both cases the IP is valued by a sum of parts approach.

The primary methodology for the product valuations is a risk adjusted Net Present Value ("rNPV") of future free cash flows. The basis for estimating future cash flows is the incidence and prevalence of the targeted diseases using published data coupled with an estimated selling price determined by benchmarking against established and emerging therapies for cancer and recognition of competition in determining a reasonable market penetration such that a realistic revenue stream may be established.

The product or products to derive from CF33 is/are at an earlier stage of development than HER-Vaxx and B-Vaxx and a specific target has yet to be determined. Nonetheless, a similar methodology was applied to the CF33 IP as used for the Imugene portfolio. CF33 has a lower Likelihood of Approval ("LOA") due to its earlier status and revenues are further into the future.

The valuations, therefore, rely on future revenue projections with no assurances in the way of precedent or forward contracts and from this perspective cash flows must be viewed as conjectural. Considerable due diligence and research have been undertaken to substantiate assumptions used in financial models and the chosen methodology is one accepted by pharmaceutical and biotechnology firms and their analysts worldwide.

# 3. The Commercial Opportunity

## 3.1 Pharmaceutical Industry Overview

Development of a novel therapeutic product, where that product is a new chemical, biological or cell therapy, is a risky and costly business. The route to market approval is comprised of several well-defined stages, during which the sponsor gathers evidence to convince regulatory authorities that its product is safe and efficacious for the targeted medical condition, and demonstrates that it can consistently manufacture the therapeutic or have it manufactured.

The usual study stages for a drug are as follows:

a. Pre-clinical development –necessary to demonstrate effectiveness in animal replicates of the targeted disease or by some other recognised study method followed by well-defined studies to show that it is safe and non-toxic in *in vitro* tests, such as cell cultures, and in whole animal, *in vivo*, studies. PD1-Vaxx and and the CF33 platform are in this stage of development.

   Initiation of trials requires a detailed submission, known as an IND Application, and it is the regulator such as the US FDA or the European Medicines Agency ("EMA") who decides whether there is adequate evidence of safety, knowledge of the drug's behaviour and a rationale for efficacy to allow studies. CF33 is understood to be preparing its dossier for IND submission in the US.

b. Phase 1 – a first-in-human trial aims to show safety at the anticipated dosages in, generally, healthy human volunteers. In some cases, often due to ethical requirements and commonly with cancers, trials may be conducted in diseased subjects and possibly result in demonstration of a level of preliminary efficacy.

c. Phase 2 - the treatment is administered to a number of individuals selected from patients for whom the drug is intended. Successful Phase 2 trials provide significant evidence on efficacy and additional data on safety and dosage level. Final product specification/formulation and manufacturing process are commonly finalised at this stage. HER-vaxx and B-Vaxx are in Phase 2 of their development program.

d. Phase 3 - this final premarketing phase involves large-scale trials on patients to obtain additional evidence of efficacy. Larger sample sizes increase the likelihood that actual benefits will be found statistically significant and that any adverse reactions that may occur infrequently in patient populations will be observed. Phase 3 trials are designed to closely approximate the manner in which the drug will be used after marketing approval.

After all clinical trial phases have been completed, the sponsoring company submits an application to the regulator in each country in which it wishes to sell the product to obtain marketing approval. Some countries may require additional studies especially where there are ethnic or cultural differences to disease presentation and responses to treatments.

Drugs targeting multiple indications or conditions will require separate efficacy trials, generally Phase 3, for each indication.

Our valuation methodology employs an rNPV-approach which requires estimates of future revenues and expenses that may result from sale or license of drug products with adjustment to cash flows based on the likelihoods of the therapy development program's transitioning through the well-defined stages of evaluation. Over the past three decades there have been several published analyses of success rate data, most of which derive from analysis of US and European clinical trial activity. More recently, these have included indication- and drug type-specific information.

These studies determine the phase transitional probabilities, the chances of progressing through the various stages of development. The cumulative probability is the likelihood that it will complete all stages and be approved.[6, 7, 8] The LOA for a compound entering Phase 3 is around 33.0% according to Thomas, *et al*.[8] These authors also present Phase 3 transitional likelihoods for major solid and haematological cancers.

Table 3 lists probabilities for oncology drugs, both new chemicals (referred to as New Molecular Entities or "NME"s) and biologicals, once they enter the clinical stages of development.

**Table 3: Transitional Probabilities for Drugs Development and Cancer Drugs** (Thomas, *et al*)

| Successful completion of: | Transitional Probability | | |
|---|---|---|---|
| | All Drugs | Biologics | All Cancer |
| Phase 1 | 63.2% | 66.0% | 62.8% |
| Phase 2 | 30.7% | 34.4% | 24.6% |
| Phase 3 | 58.1% | 57.2% | 40.1% |
| Registration | 85.3% | 88.4% | 82.4% |
| **Cumulative probabilities** | **9.6%** | **11.5%** | **5.1%** |

There is roughly an 5% chance that a new cancer drug entering clinical trials for the first time will achieve approval for marketing with biologics having a greater likelihood than chemicals. Of the cancers, Thomas, *et al*. report poorer outcomes for lung cancer, gastric cancer and pancreatic cancer drugs than for others. HER-Vaxx and B-Vaxx may be considered biologics in the current context although we have used probabilities based on cancer type for the valuation analyses.

There have been too few OV products approved to present meaningful statistics on such products. The only approved product being Imlygic® (talimgene aherparepvec, Amgen), approved in the US in 2015 for advanced melanoma. Again, our analyses for CF33 draw on likelihoods of cancer type.

## 3.2 Gastric Cancer

Gastric cancer, the initial target for HER-Vaxx, represents a large unmet need, particularly throughout Asia, because of its poor prognosis and lack of suitable treatment options. Cultural issues in the Asian region enhance the demand for cancer treatments that do not debilitate or disfigure patients as may occur with chemotherapy.

A gastric carcinoma is a malignant tumour arising from the epithelium of the stomach. Adenocarcinoma accounts for 95% of gastric malignancies, the remaining 5% being composed of sarcomas. Although its frequency has decreased dramatically during the last few decades in the Western world, this cancer still contributes significantly to the overall mortality. The incidence of adenocarcinoma varies greatly depending on the geographical area. The annual incidence in Japan is estimated at 140 cases per 100,000 per year, whereas in the Western world it is more like ten per 100,000. There is a higher incidence of gastric cancer in males than in females with a ratio of 2.5:1.5, and a higher incidence in lower socio-economic groups and in people over the age of 40.

Gastric cancer is currently the fourth most common cancer in men and women worldwide after lung, breast, and colorectal cancers. In 2018, some 1,034,000 incident cases occurred (5.7% of all new cancer cases) and, of these, 683,000 were in men. Seventy four percent of new cases worldwide are recorded in Asia, with 44% in China and 11% in Japan.

[6] DiMasi JA & Grabowski HG. Economics of New Oncology Drug Development. J Clin Oncology 25(2):209, 2007.
[7] Hay M, *et al*. Clinical Development Success Rates for Investigational Drugs. Nature Biotech 32(1):40, 2014.
[8] Thomas DW, *et al*. Clinical Development Success Rates 2006-2015. Bio / Biomedtracker / Amplion. June 2016.

The poor prognosis associated with gastric cancer means that, despite its high incidence, the prevalence is relatively low compared with other cancers that have better survival rates, such as breast and prostate cancers. Globally, it is estimated that 1,590,000 men and women were living with gastric cancer in 2018.

In most patients diagnosed with gastric cancer, the disease is already at an advanced state as a result of the widespread lack of screening. The exception is in Japan, where gastric cancer screening is routine. Consequently, the prognosis for gastric cancer is usually extremely poor. Survival rates are heavily dependent on the clinical staging of the disease at the time of diagnosis. In the US, the relative five-year survival rates for gastric cancer patients were: 61.1% for the localized stage, 23.7% for regional cancers, and 3.4% for distant cancers.

## 3.3 Lung Cancer

The American Cancer Society's estimates for lung cancer in the US for 2019 are:

- About 228,150 new cases of lung cancer (116,440 in men and 111,710 in women); and
- About 142,670 deaths from lung cancer (76,650 in men and 66,020 in women).

Globally, there are an estimated 2.1 million cases of lung cancer diagnosed annually with 1.8 million deaths. Lung cancer is by far the leading cause of cancer death among both men and women. Each year, more people die of lung cancer than of colon, breast, and prostate cancers combined. Lung cancer mainly occurs in older people. Most people diagnosed with lung cancer are 65 or older, while a very small number of people diagnosed younger than 45. The average age at the time of diagnosis is about 70.

Non-small cell lung cancer is the most common type of lung cancer, accounting for around 80% to 85% of cases.

Currently lacking convincing treatments, lung cancer presents a major challenge for drug development. CF33 has shown strong anti-tumour responses in preclinical studies in nearly all US National Cancer Institute's NCI-60[9] cell lines including lung and TNBC.

## 3.4 Breast Cancer

Metastatic breast cancer continues to account for more than 626,000 deaths yearly with HER-2 positive breast cancers representing approximately a quarter to one third of cases. Over-expression of HER-2 has been correlated with increased disease aggressiveness and poor prognosis. Despite the efficacy of drugs such as trastuzumab and lapatinib, progression of metastatic disease in these patients is inevitable. HER-2 overexpression is also reported in lung, gastric, ovarian, and pancreatic cancers, all of which are in need of improved treatment options. Since HER-2 continues to be expressed in patients with refractory disease, using an immune-targeting approach against HER-2 remains a promising strategy. A number of clinical trials have confirmed the ability of vaccines to activate T cell and antibody responses against HER-2.

Breast cancer is by far the most frequent cancer among women with an estimated 2.09 million new cancer cases diagnosed in 2018 (24% of all cancers). Overall, approximately 20% of women diagnosed with early-stage breast cancer have a poor ten-year outcome and will suffer disease recurrence, metastasis or death within this time period. The remaining 80% of breast cancer patients, diagnosed at an early stage, have a good ten-year prognosis and are unlikely to need, or benefit from, additional aggressive adjuvant therapy, such as chemotherapy.

[9] The **NCI-60 Human Tumor Cell Lines Screen** provides access to cancer cells for *in vitro* testing the activity of novel drugs. It is accessible by the global cancer research community. The screen utilizes 60 different human tumour cell lines to identify and characterize novel compounds with growth inhibition or killing of tumour cell lines (https://dtp.cancer.gov/discovery_development/nci-60).

Current clinical practice guidelines for the adjuvant treatment of patients with operable invasive breast cancer are based primarily on clinicopathologic risk factors, such as nodal status, tumour size, tumour grade, HER-2 status, and oestrogen receptor ("ER") and progesterone receptor ("PgR"). Tumours that are hormone receptor positive are more likely to respond to hormone therapy and also typically grow less aggressively, thereby resulting in a better prognosis for patients with ER+/PgR+ tumours.

The clinical subset for Imugene is HER2+ patients, representing about 20% of breast cancer incidence. For the CF33 analysis we have used the triple negative subset that is approximately 15% of breast cancers.

## 3.5 Cancer Drug Development Times and Costs

Cancer development is notorious for its failure rates due to the complex biology and limited understanding of the disease, with no such thing as a cure in any cancer form.

DiMasi and Grabowski assessed the development times for 175 oncology drugs which entered clinical trials between 1993 and 2002 and found that the average time from lodgement of an IND to commence clinical trials through to approval was 9.1 years compared with all other medical indications of 8.1 years.[10] A further analysis of cancer drug development times by Adams & Bantner found the following average durations: Phase 1, 21 months; Phase 2, 30 months and Phase 3, 29 months (6 years and 8 months).[11] These authors estimated the cost for developing a cancer drug from discovery to registration as $1.042 billion.

In recent times a number of biologics have been approved for marketing following early stage clinical trials.[12] Of the 14 launched in 2017 for cancer treatments, seven were approved from a Phase 2 trial and three from a Phase 1/2, reflecting the improvements in efficacy compared to current standards of care, or absence of treatment options. For those medicines approved from earlier Phase 1/2 trials, the key endpoints considered were response rates and remission rates, which were often significant, especially in advanced disease where other treatment options remain limited. Such products include enasidenib for AML approved following a Phase 1/2 study. Ivosidenib was submitted to the FDA in December 2018 following Phase 1 trial results.

The average pre-tax cost involved in developing a new prescription pharmaceutical has recently been estimated at US$2.5 billion.[13] The analysis includes accounting for additional drug candidates required to ensure the one success. In other words, for each product approved, a company must fund, on average, 10 compounds entering a Phase 1 study. Increases in the cash outlays to conduct clinical trials and higher drug failure rates have contributed to dramatic increases in R&D costs over the last two decades.

## 3.6 The Market for Cancer Drugs

The World Health Organisation's ("WHO") International Agency for Research on Cancer ("IARC") estimates that in 2018 there were 18.1 million cancer cases diagnosed globally resulting in 9.6 million deaths, and that the annual incidence rate will rise to over 29.5 million in 2040.[14]

In both sexes combined, lung cancer is the most commonly diagnosed cancer (11.6% of the total cases) and the leading cause of cancer death (18.4% of the total cancer deaths), closely followed by female breast cancer (11.6%), prostate cancer (7.1%), and colorectal cancer (6.1%) for incidence. For mortality, colorectal cancer (9.2%), stomach cancer (8.2%), and liver cancer (8.2%) are the leading cancers.

[10] Di Masi. Metrics on Technical Risks, Clinical Development Times, and Approval Times for Cancer Drugs. ASCO/IOM Workshop, Washington, Feb 11, 2013.
[11] Adams CP & Brantner VV. Estimating The Cost of New Drug Development: Is It Really $802 Million? Health Affairs 25(2):420, 2006.
[12] Aitken M, et al. Global Oncology Trends 2018. Innovation, Expansion and Disruption. IQVIA Institute for Human Data Science. May 2018.
[13] DiMasi JA. Innovation in the Pharmaceutical Industry: New Estimates of R&D Costs. Co-authors Grabowski HG & Hansen RW. Briefing. Cost of Developing a New Drug. Tufts Center for the Study of Drug Development. 18 Nov 2014.
[14] Bray F, et al. Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. CA 98(6):394, 2018.

Cancer cost the EU €126 billion in 2009, with health care accounting for €51·0 billion (40%).[15] Drug expenditure accounted for more than €13·5 billion, ie. 27% of cancer-related health-care costs. The referenced publication reports that in the US, the cost of cancer, excluding informal care and morbidity losses (cost of lost productivity due to illness), was estimated at US$202 (€157) billion in 2008, of which US$77 (€60) billion were direct medical costs and US$124 (€97) billion were mortality costs (cost of lost productivity due to premature death). The US figure per capita of €196 is more than any country in the EU and about €100 more per citizen than the EU as a whole.

In 2015, the US Agency for Healthcare Research and Quality ("AHRQ") estimated that the direct medical costs for cancer in the US were US$80.2 billion with 11%, US$10 billion, being the cost of drugs.[16]

The global oncology drugs market was valued at US$97.4 billion in 2017, and is estimated to reach at $176.5 million by 2025, with a CAGR of 7.6% from 2018 to 2025.[17] The total estimated spend on cancer drugs in the US in 2015 was US$32 billion.[18] Spending on cancer drugs in the US has doubled since 2012 and reached almost US$50 billion in 2017.[19]

Since the late 1990s there has been a progressive increase in the launch price of new cancer drugs. Most cancer drugs launched between 2009 and 2014 were priced at more than US$100,000 per patient for one year of treatment.[20] By 2014, the average cost of a new orally administered cancer medicine exceeded US$135,000 a year, up to six times the cost of similar drugs approved in the early 2000s, after adjusting for inflation. The median annual cost of a new cancer drug in 2017 exceeded US$150,000 compared to US$79,000 for new launches in 2013. In 2017, all cancer drug launches had US list prices above US$50,000 per year and the median exceeded US$150,000.

The average cost of treatment of cancer with a checkpoint inhibitor (anti-PD-1), Keytruda® (pemrolizumab, Merck & Co) approximately US$120,000 and $150,000 in Australia, and Opdivo® (nivolumab, Bristol-Myers Squibb) US$150,000, and the CTLA-4 blocker Yervoy (ipilimumab, Bristol-Myers Squibb) US$120,000.
In 2017, Novartis advised that its CAR-T product Kymriah® (tisagenlecleucel) could cost up to US$475,000. Tisagenlecleucel is a genetically modified autologous T-cell immunotherapy.[21] Each dose is a customized treatment created with a patient's own T-cells, which are collected and sent to a manufacturing centre where they are genetically modified to include a new gene that contains a specific protein - a chimeric antigen receptor that directs the T-cells to target and kill leukemia cells that have a specific antigen (CD19) on the surface. Once the cells are modified, they are infused back into the patient to kill the cancer cells.

[15] Luengo-Fernandez R, *et al*. Economic burden of cancer across the European Union: a population-based cost analysis. The Lancet Onc 14(12):1165, 2013.
[16] Economic Impact of Cancer. American Cancer Society (https://www.cancer.org/cancer/cancer-basics/economic-impact-of-cancer.html).
[17] Gill S & Sumant O. Oncology/Cancer Drugs Market by Drug Class Type (Chemotherapy, Targeted Therapy, Immunotherapy, and Hormonal Therapy) and Indication (Lung Cancer, Stomach Cancer, Colorectal Cancer, Breast Cancer, Prostate Cancer, Liver Cancer, Oesophagus Cancer, Cervical Cancer, Kidney Cancer, Bladder Cancer, and Others): Global Opportunity Analysis and Industry Forecast, 2018 – 2025. Allied Market Research February 2019 (Abstract: https://www.alliedmarketresearch.com/oncology-cancer-drugs-market).
[18] Dolgin E. Bringing down the cost of cancer treatment. Nature 555, S26, 2018.
[19] Aitken M, *et al*. Global Oncology Trends 2018. Innovation, Expansion and Disruption. IQVIA Institute for Human Data Science, May 2018.
[20] Kimmer BK. The Imperative of Addressing Cancer Drug Costs and Value. National Cancer Institute, March 15, 2018.
[21] Hagen T. Novartis Sets a Price of $475,000 for CAR T-Cell Therapy. OncLive Aug 30, 2017 (https://www.onclive.com/web-exclusives/novartis-sets-a-price-of-475000-for-car-tcell-therapy, accessed 11 July 2019).

**Table 4: The Cost of Cancer Treatments**

| Drug | Active | Company | Cancer | Price (US$) |
|---|---|---|---|---|
| Keytruda | Pemrolizumab | Merck & Co | Melanoma, lung, head and neck | 120,000 |
| Opdivo | Nivolumab | BMS | Melanoma, lung, kidney, liver | 150,000 |
| Yervoy | Ipilimumab | BMS | Metastatic melanoma | 120,000 |
| Kymriah | Tisagenlecleucel | Novartis | ALL | 475,000 |
| Vyxeos | Daunorubicin and cytarabine | Jazz Pharmaceuticals | AML | 77,500 |
| Venclexta® | Venetoclax | AbbVie/Roche | AML | 110,000 |
| Idhifa® | Enasidenib | Celgene | AML | 110,000 |
| Mylotarg® | Gemtuzumab | Pfizer | AML | 24,600 |
| Tibsovo® | Ivosidenib | Agios Pharmaceuticals | AML | 230,000 |

In 2018, the top 20 oncology drugs generated almost $80 billion worldwide with the leading four, Revlimid®, Keytruda®, Avastin® and Herceptin®, representing $31 billion (Table 5).[22]

**Table 5: Sales of Ten Leading Cancer Drugs 2018**

| Drug | Generic Name | Company | Condition | Global Sales (US$'mil) |
|---|---|---|---|---|
| Revlimid® | Lenalidomide | Celgene | Multiple myeloma | 9,685 |
| Keytruda® | Pembrolizumab | Merck & Co | Advanced melanoma, NSCLC | 7,171 |
| Herceptin® | Trastuzumab | Roche | HER2+ breast | 7,052 |
| Avastin® | Bevacizumab | Roche | Breast, colorectal, lung, kidney, ovarian | 6,917 |
| Rituxan® | Rituximab | Roche | Non-Hodgkins lymphoma, chronic lymphocytic leukemia | 6,820 |
| Opdivo® | Nivolumab | BMS / Ono Pharmaceuticals | NSCLC, metastatic melanoma, renal cell carcinoma | 6,735 |
| Ibrance® | Palbociclib | Pfizer | Breast | 4,118 |
| Imbruvica® | Ibrutinib | J&J / Pharmacyclics | Mantel cell lymphoma, CLL | 3,590 |
| Zytiga® | Abiraterone | J&J | Prostate | 3,198 |
| Xtandi® | Enzalutamide | Astellas Pharma / Pfizer | Prostate | 2,950 |

Acuity considers that an average selling price in excess of US$80,000 for HER-Vaxx and B-Vaxx is a reasonable expectation for the US. Lower prices generally apply outside of America.

[22] TOP Pharma Drugs By Sales in 2018 (*PharmaCompass Annual Report Compilation_2018/xlxs*, created 11 March 2019).

## 3.7 Competition

There are many cancer drugs in development including ones that will have application to the same cancers as those which will be amenable to treatment by Imugene and CF33 products. The Pharmaceutical Research and Manufacturers of America ("PhRMA") report that there are 39 drugs and vaccines in development for gastric cancer, 108 for breast cancer and 132 for lung cancer.[23] Only a small number of these, however, are vaccines.

One leading competitor to Imugene is Marker Therapeutics Inc. (NASDAQ:MRKR, market capitalization US$242 million) which is currently enrolling women with TNBC and ovarian cancer into Phase 2 clinical trials of its therapeutic vaccine candidate TPIV200. TPIV200 is a T cell vaccine that consists of five naturally processed peptide antigens derived from the highly prevalent tumour cell surface molecule, Folate Receptor Alpha (FRα). FRα is overexpressed by approximately 90% of ovarian cancer cells and 80% of TNBC cells.

Another Neu2 vaccine under development, NeuVax® (nelipepimut-S, Galena Biopharma, Inc. (private) was discontinued in June 2016 when Phase 3 interim results suggested the targeted end-points were unlikely to be reached. NeuVax® was being evaluated to prevent breast cancer recurrence after standard-of-care treatment. It is based on the immunodominant peptide derived from the extracellular domain of the HER2 protein.

As presented in Section 3.1 one OV has been approved for marketing - Imlygic® (Amgen), an oncolytic herpes virus, was approved in the US in 2015 for advanced melanoma. Another advanced oncolytic virus projects is Reolysis® (Oncolytics Biotech Inc, NASDAQ:ONCY, market capitalisation US$32.0 million) which has completed Phase 3 studies and will enter a phase 3 study in HR+/HER2- metastatic breast cancer.

GL-ONC1 is another vaccinia virus under development by Genelux Corporation (private) which is in Phase 1b/2 trials for ovarian cancer and Acute Myeloid Leukemia ("AML").

Other OV developments are discussed in Section 5.1 of this report.

## 3.8 Advantages & Risks Relevant the Valuations of Imugene and CF33

One of the advantages that Imugene has is that there is limited competition in the development of both the B cell vaccines and CF33. The patents provide a high level of assurance that direct competition will be restricted. Trials of HER-Vaxx and B-Vaxx are well advanced with demonstration of safety and preliminary efficacy already available.

The Company is exposed to most risks inherent with early-stage biotech companies including financial and technical risks. These include, for Imugene's products and CF33:

- The development of pharmaceuticals, although following well understood pathway, remains highly risky. Many risks cannot be resolved simply by better science or smarter thinking because the failures relate to ill-understood biochemical, disease or immunological pathways, potential toxicities of reagents and off-target interactions;

- HER-Vaxx/B-Vaxx and CF33 are novel technologies, making it difficult to predict the time, cost and potential success of product candidate development. The proposed R&D programs may not lead to the successful identification, development or commercialization of any potential products;

- Positive results obtained from early preclinical studies or clinical trials of the product candidates may not be predictive of results of later studies or trials, and failure to replicate positive results from early studies or clinical trials may inhibit the ability to further develop and commercialize product candidates. Drug candidates can fail in Phase 3, while Phase 2 remains the most risky stage for cancer drugs;

[23] America's Biopharmaceutical Companies. Medicines in Development for Cancer. 2018 Report (http://phrma-docs.phrma.org/files/dmfile/2018_MID_Cancer.pdf).

- Patent protection is paramount to success in biotechnology and is the key attribute supporting valuations and the motive underpinning acquisitions in the field. Even so, third parties may assert claims against Imugene alleging infringement of their patents and proprietary rights, or the Company may be drawn into lawsuits to defend or enforce the patents, representing risk to the sale of products and a strain on financial resources;

- Imugene is reliant on adequate funding to complete development and launch of products. Considerable funding may also be required to fight patent infringements. Lack of capital is a risk that is not reflected in the current market valuation;

- The development of cancer treatments is the realm of large pharmaceutical companies and well financed biotechs. Many have substantially greater capital and other resources and are able to expend more funds and effort than Imugene on R&D and promotion. Competitors may develop more effective, more affordable or more convenient products. These competing products may render Imugene's product candidates obsolete;

- Time to market is critical with any new technology, particularly in the medical technology fields. Adequate capital and competent skills, and access to market leaders, part of the revised strategy, are essential to expediting development and commercialization; and

- Reliance on partners and collaborators to conduct studies, including Contract Research Organization ("CRO"), launch and promote products is essential to the success of Imugene.

CF33 has a number of advantages relative to the other OV in development. It is based on a pox-virus which has a short, well characterized life cycle and spreads very rapidly from cell to cell, and is known to be safe having been administered to millions of people already, albeit not the chimeric CF33 virus. It is highly cytolytic for a broad range of tumour cell types. For the purpose of expression of foreign or exogenous genes, CF33 has a large insertion capacity (> 25 kb). Part of its safety profile is because CF33 does not integrate into the host or recipient's genome as may other viruses.

As a therapeutic agent, CF33 may be administered intratumorally and via intravenous routes as a consequence of its abscopal effect.

CF33 is amenable to large scale production of high levels of infectious virus. A number of studies have been completed with CF33 as well as some of the derivatives. It has proven very safe in nude mice and in immunocompetent mice.

The risks to CF33's success include:

- The fact that the patent for CF33 has not been granted;
- The vaccinia virus has not been tested in humans in its current chimeric form and has not been previously used for its oncolytic activity; and
- Commercial manufacturing costs have not been determined, and an acceptable price that covers COGS and ensures adequate return on the development investment may be unattainable.

There are several routes to market that Imugene may adopt for any or all of its products, including completion of development in-house and self-manufacturing and marketing, out-licensing of platform or individual products at an appropriate stage and outright sale. For the purpose of valuation we have chosen an out-licensing model as this is the most typical route for an Australian biotech as it offers advantages through access to skills and resources of the larger partner and reduces costs and risks.

The key risks have been factored into the valuation either through our selected discount rate and risk adjustments.

# 4. Valuation Methodologies

For the purpose of our valuation opinion, current market value is defined as the amount at which the units of IP could be expected to change hands in a hypothetical transaction between a knowledgeable willing, but not anxious, buyer and a knowledgeable willing, but not anxious, seller acting at arm's length. We have not considered special value or control premium in this assessment although it could be expected that an unrelated acquirer may pay a premium to obtain the Company's technology to complement its own portfolio or to avoid patent infringements.

In valuing a mature business entity, the analyst tends to follow a methodology that draws heavily on the company's historical income, either by performing a NPV of expected future earnings, the confidence in which derives from past activity, or capitalisation of maintainable earnings. Another technique considers the orderly realisation of assets. In the case of Imugene, the sole assets are IPR&D. There are no historical cash flows available for extrapolation and no current product sales, and there is uncertainty that product development will be completed successfully.

Techniques used for valuing intangible assets, including IPR&D, generally fall into three main categories:

1. Cost Based;
2. Market Based; and
3. Revenue Based.

We examined several approaches, many of which were considered not applicable to the business activities and developmental status of Imugene. These are briefly discussed in the following sections. The preferred valuation method, that relying on a risk adjusted DCF of projected net benefit, is presented in further detail in Section 4.2.

## 4.1 Cost Based Methods

There are several cost approach valuation methods, the most common being the reproduction cost and the replacement cost methods. Often these may be based on the historical costs incurred by the original developer. Five components of cost are generally included in the analysis being: Materials; Labour; Overhead; Developer's Profit; and Entrepreneurial Incentive.

Although drug development is extremely costly, future benefits are considered to be worthy of the investment and deals to acquire promising R&D-stage programs are often an order of magnitude higher than the past expenditure. Generally, however, patents provide a market monopoly for the originator's inventions and it would be very difficult for a third party to replicate the technology with equivalent utility, specificity and activity without infringing those patents. They are the key asset underpinning inter-industry acquisitions and represent more than a cost-to-replicate the technology.

We consider that cost based methods are not applicable to the IP.

## 4.2 Market Based Methods

The most recent trading history of shares in a company provides evidence of the fair market value of the entity where they are publicly traded in an informed and liquid market. An Enterprise Value ("EV") strips the share price or market capitalisation of cash and cash equivalents and adds in debt to effectively determine an IP valuation in companies with no or limited goodwill. Therefore, one approach is to compare company EVs where the technology is similar, targeting the same markets and at an equivalent stage of development.

Techniques based on analysis of transactions between companies, equity valuations or capitalisations of comparable companies have considerable merit in the biotechnology sector. There are thousands of transactions taking place in the industry every year where one company licenses IP from another or enters into a collaborative venture. There are also many fund raisings, both private placements and Initial Public Offerings ("IPO"), which may be used as analogies.

A market analysis should realistically be undertaken by comparing companies, products or transactions at similar stages of development, ie. discovery, candidate selection or clinical. In the case of the value placed on a company, that company should be single purpose and/or technically equivalent to the subject company or IP. Such criteria are often difficult to meet and comparable analyses are usually used only to support the values derived with other methodologies or to provide a "ball park" estimate.

Nonetheless, an analysis of some relevant companies is presented in Section 5.1 of this report.

## 4.3 Methods Based on Future Prospects

A technique suitable for valuing a business or a project, such as IPR&D, with strong and relatively predictable future prospects is based on a DCF analysis. To assume any level of credibility, the DCF must be based on sound cash flow predictions, with justifiable assumptions regarding sales estimates, expenses and revenue timings. These are then valued to present day using a discount rate, often following probability adjustment, that recognises the time value of money and risks involved in achieving the forecast cash flows.

In the circumstance where the projections are not founded on firm contracts or supported by historical performance, and even where they are, it is appropriate to include some form of adjustments, covering development and achieving market penetration, as well as generalized industry or market risks. It is recognised that probability adjustments based on published stage transitional likelihoods provides an acceptable approach to valuing pharmaceuticals.

Probability adjusted cash flows are then discounted to provide a Net Present Value ("NPV"), being the valuation, at an appropriate discount. The usual discount rate is a company's Weighted Average Cost of Capital ("WACC") which reduces to the Capital Assets Pricing Model ("CAPM") in the absence of debt. The CAPM for Imugene may be determined using the following formula:

$$CAPM = Rf + \beta \times (Rm - Rf)$$

Where:

Rf is the Risk Free Rate of Return. To estimate the risk-free rate, ten to 30-year US Government Bond yields may be used. Inflation is deducted to calculate the real risk-free rate. The current rate is 2.6% (this is a nominal rate and includes inflation). The US rate is chosen as the majority of revenues will derive from America and the long-term nature of bonds matches the patent life.

Rm is the Expected Market Return and (Rm – Rf) the Risk Premium being the premium over the risk-free rate that an investor requires to invest in the market portfolio. The current Expected Market Return for investors is around 6.0% to 7.0%.

Beta (β) of a particular investment is a reflection of its risk expressed as a percentage of the volatility to that of a market portfolio, ie. a portfolio of stocks sufficiently diversified to reflect average market movements. The rate of return on the market portfolio will, by definition, fluctuate identically with the market and therefore its beta is one. Investments with Betas lower than unity are less volatile than the market and thus would be expected to have a risk premium lower than the overall market premium.

We would expect a biotech company to have a systematic risk significantly higher than the market, and therefore beta above 1.0. The website Infront Analytics[24] provides one-year betas for the following early stage oncology companies (see Table 6) with an average of 1.2 in the range 0.36 to 2.05. EVs are obtained from Yahoo Finance.[25] The data presented in Table 6 is representative only by no means exhaustive.

[24] Infront Analytics (https://www.infrontanalytics.com, accessed June 2019).
[25] Yahoo Finance (https://finance.yahoo.com, accessed June 2019).

**Table 6: One Year Betas for a Portfolio of Early Stage Oncology Companies**

| Company | Country | Beta levered (2 year) | Enterprise Value (US$'mil) | Most Advanced Product |
|---|---|---|---|---|
| Actinium Pharmaceuticals, Inc | USA | 1.52 | 33.8 | P3 |
| BioLineRx Ltd | ISR | 1.51 | 52.4 | P3 |
| Bio-Path Holdings, Inc | USA | n/m | 36.6 | P2 |
| Celsion Corp | USA | 1.32 | 38.5 | P3 |
| DelMar Pharmaceuticals Inc | CAN | n/m | 4.5 | P2 |
| Kazia Therapeutics Ltd | AUS | n/m | 17.2 | P2 |
| MediGene AG | GER | 1.81 | 216 | P2 |
| MEI Pharma, Inc | USA | n/m | 107 | P3 |
| Oncolytics Biotech Inc | CAN | 1.70 | 36.1 | P2 |
| OncoSec Medical, Inc | USA | n/m | 28.3 | P2 |
| Patrys Ltd | AUS | n/m | 19.5 | P1 |
| PharmAust Ltd | AUS | 1.23 | 7.25 | P1 |
| Sellas Life Sciences Group | USA | n/m | 11.1 | P2-3 |
| Sophiris Bio Inc | CAN | 2.40 | 23.1 | P2 |
| Ziopharm Oncology, Inc | USA | 1.31 | 638 | P2 |
| **Average** | | **1.60** | **84.6** | |

A number of betas have been excluded as not meaningful (n/m).

Most of the above companies have negligible revenues and none is profitable, all being research-based. Their EVs range from US$4.5 million to US$638 million. Excluding Ziopharm Oncology as a potential outlier, the average is US$45.1 million ($64.4 million).

A beta in excess of 1.5 is applicable to Imugene. Following deduction of long-term projected inflation rate for the US of 1.8% from the Rf, the CAPM at a beta of 1.5 is, therefore, 0.8% + 1.5 x (6.5 - 0.8) = 9.4% and at a Beta of 1.8 the CAPM is 11.0.

To the CAPM may be added a specific company risk premium. This is a metric that considers the size and financial stability of Imugene and the stages of development of product(s) where none has reached market. We suggest that a company premium of 2% to 3% may be applicable.

We, therefore, consider a real discount rate range of 13.0% to 14.0% as applicable.

# 5. Valuation Opinion

## 5.1 Comparables Analysis

Any of the companies listed in Table 6, all with Phase 1 to 3 clinical-stage assets, may provide reasonable analogies. The EV in these cases, being based on market capitalisation following deduction of cash and inclusion of debt, more-or-less equates to an IP valuation. The range, of course, is very broad. The average of US$95.6 million ($137 million) for those with Phase 2 and 3 assets (range US$4.5 to US$638 million) may be reasonable comparators for Imugene.

Of the ASX listed cancer development biotechnology companies, all R&D-based with net losses currently, there are nine with their most advanced development candidate in Phase 1 or Phase 2, excluding Imugene. These have an average EV of $18.0 million and a range of $1.0 million to $57.1 million (see Table 7). There is a single listed company with preclinical assets, has an EV of $16 million, which may provide guidance in valuing CF33.

**Table 7: ASX Listed Australian Cancer Developers**

| Company | Status of Products | EV* ($'mil) |
|---|---|---|
| Bionomics Limited | 1 x Phase 2, 4 x Phase 1 | $16.6 |
| Cellmid Limited | Preclin | $16.0 |
| Immutep Australia Limited | 1 x Phase 2, 1 x Phase 1 | $57.1 |
| Kazia Therapeutics Limited | 1 x Phase 1 | $19.5 |
| Oncosil Limited | 2 x Phase 1 | $20.5 |
| Patrys Limited | 1 x Phase 1, 4 preclinical | $16.5 |
| PharmAust Limited | 1 x Phase 1, 1 x preclinical - human, veterinary | $9.2 |
| Prescient Limited | 1 x Phase 2, 3 x Phase 1 | $4.9 |
| Race Oncology | Repurposed drug Phase 3 | $1.0 |
| Regeneus Limited | 2 x Phase 1 human, veterinary | $17.5 |

* EV based on 30 June 2018 Balance Sheet and 10 July 2019 market capitalisation (source: Yahoo Finance)

Two recent transactions of relevance in considering a valuation of Imugene are:

- Boehringer Ingelheim (Germany) announce in July 2019 that it would acquire Swiss company, AMAL Therapeutics SA, a private company, for €325 million ($517 million). AMAL Therapeutics is developing immunotherapies for cancer treatment, specifically colorectal cancer, with its lead candidate about to enter human clinical trials. No further details of the transaction have been made public other than that part of the payment will be paid upfront with the rest contingent on meeting clinical milestones.[26]

[26] Boehringer Ingelheim Acquires AMAL Therapeutics, Significantly Enriching Its Cancer Immunology Portfolio with Novel Cancer Vaccines Platform. Boehringer Ingleheim Press Release 15 July 2019 (https://www.boehringer-ingelheim.com/press-release/acquisition-amal-therapeutics).

- In 2018, Australian company Viralytics Limited was acquired by Merck & Co. (USA) for approximately $502 million.[27] Viralytics was in development of an investigational oncology immunotherapy requiring a single pivotal trial prior to its first marketing approval. The company's initial target was metastatic melanoma in patients who have failed current immunotherapies, a relatively small market, but attractive to Merck as the Viralytics product candidate is used in conjunction with one of its products.

It is fair to suggest that both acquisitions were strategically driven and deal terms may exceed market valuations.

Oncolytic viruses have also attracted attention in recent years with the following of note:

- Boehringer Ingelheim acquired ViraTherapeutics GmbH in late 2018 for €210 million ($340 million). ViraTherapeutics' lead candidate, VSV-GP an oncovirus with modified glycoprotein, is being investigated alone and in combination with other therapies.[28] At the time of acquisition human trials had not commenced.

- Johnson & Johnson Inc's subsidiary, Janssen SA acquired BeneVir Biopharm, Inc with an upfront cash payment of US$140 million, plus additional contingent payments of up to US$900 million based on achievement of certain predetermined milestones.[29] BeneVir is developing T-Stealth, an oncolytic immunotherapy platform, to help patients whose tumours do not respond to current therapeutic options including immune checkpoint inhibitors. No products had entered clinical trials at the time of the acquisition.

- AstraZeneca recently entered into a collaboration with French company, Transgene SA to develop oncolytic virus candidates. AstraZeneca paid US$10 million up-front with additional pre-clinical success milestones of up to $3 million to enable Transgene to evaluate its oncolytic virus technologies to the development of five assets.[30] Transgene will contribute its virus expertise to the collaboration, including viral design and engineering, and will provide its novel vaccinia virus platform technology. Transgene will lead the *in vitro* preclinical development while AstraZeneca will select the transgenes to be encoded within the virus and will be responsible for further preclinical development activities.

Additional transactions are presented in Table 8.

[27] MSD and Viralytics Announce Acquisition Agreement Expanding MSD's Leading Immuno-Oncology Pipeline. Viralytics ASX Release 21 February 2018 (https://www.asx.com.au/asxpdf/20180221/pdf/43rsp7s15ndqtc.pdf).
[28] Boehringer Ingelheim. Press Release: Boehringer Ingelheim Acquires All ViraTherapeutics Shares to Develop Next Generation Viral-Based Immuno-Oncology Therapies. 13 September 2018 (https://www.boehringer-ingelheim.com/press-release/boehringer-ingelheim-acquires-all-viratherapeutics-shares).
[29] J$J's Janssen to Acquire BeneVir for $1 Billion. PharmTech.com May 09, 2018 (http://www.pharmtech.com/jj-s-janssen-acquire-benevir-1-billion-0, accessed 11 July 2019).
[30] AstraZeneca Press Release, 2 May 2019. AstraZeneca enters strategic collaboration with Transgene to develop innovative oncolytic virus immunotherapies (https://www.astrazeneca.com/media-centre/medical-releases/astrazeneca-enters-strategic-collaboration-with-transgene-to-develop-innovative-oncolytic-virus-immunotherapies30042019.html, accessed 11 Jul 2019).

**Table 8: Recent Transactions to Acquire Oncovirus Technology**

| Date | Source | Buyer | Deal type | Up-front (US$m) | Technology Status |
|---|---|---|---|---|---|
| May 2019 | Transgene | Astrazeneca | Licensing | 10 | Access to platform |
| Sep 2018 | Viratherapeutics | Boehringer Ingelheim | Acquisition | 245 | Preclinical |
| Feb 2018 | Viralytics | Merck & Co | Acquisition | 394 | Phase 2 |
| Nov 2017 | Oncolytics Biotech | Adlai Nortye | Licensing | 86.6 | Asian rights to Phase 2 |
| Oct 2017 | Turnstone Biologics | Abbvie | Licensing | Undisclosed | Phase 1/2 |
| Dec 2016 | Ignite Immunotherapy | Pfizer | Acquisition | Undisclosed | 50% stake |
| Dec 2016 | Psioxus | BMS | Licensing | Undisclosed | Preclinical |
| Dec 2016 | Takara Bio | Otsuka | Licensing | Undisclosed | Japan rights to HF10 |
| Nov 2016 | Virttu Biologics | Sorrento | Acquisition | 25 | Seprehvir, Phase 2 |
| Jun 2016 | Psioxus | BMS | Licensing | 10 | Enadenotucirev, Phase 1 collaboration |

These deals confirm a high level of demand for OV technologies as potentially the next significant stage in cancer immunotherapies. The acquisitions are strategic, driven by a need to have access to technology, and increasingly earlier in the technologies' development. An examination of these deals suggests that the CF33 IP could have considerable value due to its attractiveness, novelty and advanced stage.

## 5.2 Revenue Based Analysis

### 5.2.1 Imugene IP Portfolio

The primary methodology used by Acuity for valuing the Imugene and CF33 IP is the risk adjusted NPV, rNPV, of projected future cash flows.

Individual financial models have been prepared for the following Imugene development programs:

- HER-Vax developed for the treatment of HER2+ gastric cancer, commencing at Phase 2 study stage;
- B-Vax for HER2+ cancers with modeling for lung and breast cancer; and
- PD-1-Vaxx targeting colorectal cancer.

Each analysis draws on the incidence and prevalence of relevant cancers, as obtained from the WHO's Global Cancer Observatory[31], to develop financial projections with the assumption the products are licensed to a third party following completion of Phase 2 trials for an negotiated split of net benefits.

The analyses concentrate on markets in the developed world, specifically North America, Western Europe, Japan and Australasia, due to the dominance of these markets and the greater likelihood of patients being diagnosed and treated, and capable of affording costly modern cancer treatments.

[31] World Health Organisation. International Agency for Research on Cancer. Global Cancer Observatory (https://gco.iarc.fr).

We have prepared financial projections based on the available information for the term of the current patents, which expire between 2030 and 2038. We have ignored the potential for sales beyond expiry, even though there are likely to be patent extensions available. Models do not include a terminal value. The inclusion of sales beyond patent expiry would effectively increase the valuation.

Time frames for commencement and completion of the clinical trials, approvals and market launch are based on realistic schedules as outlined in the following sections and are generally in accordance with Imugene's own estimates.

On licensing following the Phase 2 studies the licensee takes over all payment obligations to technology originators. Phase 3 studies and approval costs are funded by the licensee. Effective royalties payable by the licensee or licensees to Imugene have been adjusted to provide a split at the time of out-license of 30% to Imugene and 70% to the licensee. This split is determined on a pre-tax basis as the licensor and licensee are likely to have different tax rates. Our analysis, and similar assessments presented by other analysts, suggest splits of the order of 25%:75% for a Phase 1 asset, (30%-35%):(70%-65%) for Phase 2 assets and (40%-50%):(55%-50%) for Phase 3 assets.

Imugene may expect licence fees, performance milestones and sales milestone payments. These are not incorporated into the models on the assumption that royalties and milestones will be negotiated to realise the estimated valuation. It should be noted that in our models, it is assumed that royalty obligations to the technology originators are the responsibility of Imugene's licensees. Royalty and milestone payment terms to originators, including those proposed for the COH licence, are as defined in licence agreements.

Clinical trial costs are determined on per patient estimates based on our experience with other cancer developers and patient numbers as derived from published clinical trials information (such as the US National Institutes of Health website *ClinicalTrials.gov*). The COGS and SG&A estimates for the licensee(s) in the models have been obtained by analysis of biotech and pharmaceutical company annual reports.

The following table summarizes key assumptions used in the models:

**Table 9: Summary of Assumptions used in Imugene Portfolio Analysis**

| Product | HER-Vaxx | B-Vaxx | PD1-Vaxx |
|---|---|---|---|
| Indication(s) | Gastric cancer | Lung & breast | Colorectal |
| Incidence (major markets) | 175,000 | 1,050,000 | 488,000 |
| Clinical subset | 20% | 20% | 75% |
| Uptake | 75% | 30% | 10% |
| Treatable 2019 | 26,000 | 63,000 | 48,800 |
| Price (US$'000) | 65 (ex-US) – 80 (US) | 60 - 80 | 65 - 80 |
| Potential Market 2019 (US$'mil) | 1,770 | 4,200 | 3,200 |
| Launch Year | 2025 | 2025 | 2028 |
| Peak sales (US$'mil) | 2,200 | 6,000 | 7,000 |
| Split | 30% | 30% | 30% |
| Royalty | 8.2% | 12.8% | 14.2% |
| LOA | 10% | 15.7% | 3.0% |
| Post-tax rNPV (A$'mil) | 13.9 | 93.5 | 17.1 |

Models have been prepared in USD as the major pharmaceutical market is the US and pricing is commonly set relative to USD pricing. The rNPV is converted to AUD at an exchange rate of 0.7 USD:AUD.

The valuation date is 30 June 2019 and future cash flows are discounted at 14% following probability adjustment. The analysis is in constant 2019 dollars and no consideration has been applied for inflation. The discount rate of 14% is therefore real.

The model anticipates an Australian corporate tax rate of 30.0% with tax losses carried forward (and no accounting for Imugene's current tax losses, where they exist, as these are not relevant to an IP valuation) to positive cash flow (being profitability in the absence of non-cash expenses). In preparing the financial models we have not considered tax concessions and rebates that may be available to the Company.

The analysis provides a probability adjusted after tax valuation of $124.5 million.

### 5.2.2 Sensitivity Analysis - Imugene

The valuation of Imugene presented in the previous section employs a probability weighted DCF method which relies on estimation of many inputs or assumptions to the financial projections. As many of these input assumptions are, at best, estimates and may change with time and as development advances, we subjected these to a sensitivity analysis using variance ranges that we consider reasonable. These include:

- Treatable patient population, market penetration and ASP (plus or minus 10%);
- Currency exchange rate AUD:USD (plus or minus 10%);
- Development costs (plus or minus 20%);
- Probability of success in completing product development and achieving marketing approvals (plus or minus 10%);
- SG&A and COGS (plus or minus 10%);
- Split between licensor and licensee (plus or minus 10%);
- Tax rate (plus or minus 10%);
- Discount rate (plus or minus 5%); and
- Time to launch (plus or minus 1 year).

The most significant of these is discount rate with a variance of 5% resulting in approximately 10% change to the valuation and delay to license or launch with 12 months retardation reducing the valuation by 13% and speeding up development by 12 months increasing it by 28%. The negotiated split is also extremely important with 33% going to the licensor increasing the valuation by as much as 20%. Market size, exchange rate, SG&A costs and LOA have an almost proportionate effect (+/-10% resulting in roughly +/-10% to 18% change in the valuation). Development costs and COGS are of lesser significance due to the high rewards expected from successful launch of products.

We have selected a range of valuations that is plus or minus 20% the preferred valuation.

### 5.2.3 Vaxinia CF33 Platform

Vaxinia's CF33 platform is early stage or pre-clinical and, as at the time of preparing this report, the most suitable clinical indications have not been determined. We have, based on studies conducted to date, assumed that TNBC, lung cancer, colorectal cancer and melanoma are reasonable targets for development.

With the methodology and base assumptions as presented for the Imugene IP modelling, the following specific assumptions have been applied to the determination of the CF33 IP:

**Table 10: Summary of Assumptions used in CF33 Platform Analysis**

| Target | TNBC | NSCLC | Colorectal Cancer | Melanoma |
|---|---|---|---|---|
| Incidence | 520,000 | 533,000 | 488,000 | 161,000 |
| Clinical subset | 15% | 100% | 100% | 100% |
| Uptake | 15 - 20% | 10% | 10% | 10% |
| Treatable 2019 | 15,600 | 107,000 | 48,800 | 16,000 |
| Price (US$'000) | 60 - 80 | 60 - 80 | 60 - 80 | 60 - 80 |
| Potential Market 2019 (US$'mil) | 1,050 | 3,700 | 3,300 | 1,126 |
| Launch Year | 2028 | 2028 | 2028 | 2028 |
| Peak sales (US$'m) | 1,900 | 4,200 | 6,500 | 3,300 |
| Split | 30% | 30% | 30% | 30% |
| Royalty | 7.9% | 7.9% | 7.9% | 7.9% |
| LOA | 4.0% | 2.5% | 2.8% | 3.8% |
| Post-tax rNPV (A$'mil) | 0.7 | 4.5 | 10.2 | 6.8 |

* A subset of prevalence patients is also included in the analyses.

The split between licensor and licensee is applied on a product-by-product basis for the Imugene analysis on the assumption that these are clearly uniquely differentiable product offerings. Licenses may be given to several parties on differing terms. In the case of CF33 we have assumed that the platform is licensed to a single party and, as a consequence, the split is fixed across all indications resulting in a single or common royalty amount.

At a discount rate of 14% the analysis provides a probability adjusted after tax valuation of $22.2 million.

### 5.2.4 Sensitivity Analysis - CF33

An analysis similar to that undertaken for the Imugene IP analysis was done on the CF33 cash flow. Again the valuation is sensitive to discount rate with a variance of 5% resulting in 14% change to the valuation and delay to license or launch with 12 months delay reducing the valuation by 12% and speeding up development by 12 months increasing it by 17%. The negotiated split is also extremely important with 33% going to the licensor increasing the valuation by as much as 18%. Market size, exchange rate, COGS, SG&A and LOA have an almost proportionate effect though not as great as in the Imugene analyses. In the case of CF33, we have assumed a likely range of plus or minus 15% to the valuation.

## 6. Sources of Information

We have prepared our valuation using publicly accessible information and other documents provided by Imugene and Vaxinia. Most of the assumptions on the timings and costs for the development of the proposed products are our own although we did discuss these with the Company, and the market shares, COGS and other expenses were also developed by Acuity.

We interacted with the following Imugene staff during the preparation of this report:

- **Mr Charles Walker**, Director;
- **Dr Leslie Chong**, Managing Director CEO; and
- **Dr Nick Ede**, Chief Technology Officer.

The Company provided the following confidential documents to assist with our assessment:

- Imugene Intellectual Property (*Imugene Patent Family.pptx*, created by Leslie Chong and last modified 28 June 2019);
- Kaumaya Patent Portfolio (*Kaumaya patent portfolio_0.-30-18 – DCC Revised 13 April 2018.xlxs*, created by Frank Norris last modified by Nick Ede 2 May 2018);
- Proposed Acquisition of Oncolytic Chimeric Poxvirus known as CF33. Imugene (*Draft Vaxinnia slide presentation 01 July no appendix.pptx*, created by Paul Hopper and Yuman Fong, last modified 2 July 2019);
- Exclusive License Agreement between Imugene Limited and City of Hope, signed and dated 8th July 2019;
- City of Hope. Preliminary Clinical Trial Budget, dated 10/25/2018 and included in the CF33 data room (https://digify.com/a/#/drfile/09eb6b5da9714499aea994e3cc3bc148/eb7cae8324f441a09f7063652d609211);
- Exclusive License Agreement AGT. No. A2018-2170 between Ohio State Innovation Foundation and Imugene Limited dated 31 May 2018;
- Exclusive License Agreement AGT. No. A2018-2171 between Ohio State Innovation Foundation and Imugene Limited dated 31 May 2018;
- Imugene Cash Flow Forecast FY 2019 to FY 2022 (*IMU cash flow forecast.xlxs*, last modified by L Chong 28 June 2019);
- Research Collaboration Agreement between Imugene Limited and Ohio State University dated May 31, 2018.

We conducted independent searches of the scientific and medical literature, such as the US National Institutes of Health PubMed[32] and Google Scholar[33], and patent databases through the World Intellectual Property Organization[34], The European Patent Office[35] and the US Patent and Trademark Office[36].

[32] https://www.ncbi.nlm.nih.gov/pubmed
[33] https://scholar.google.com.au/
[34] https://patentscope.wipo.int.
[35] https://worldwide.espacenet.com.
[36] https://www.uspto.gov.

## 7. Disclaimer

The valuations make certain assumptions in relation to the revenue prospects. In preparing this report we have relied on information provided by Imugene and Vaxinia, complemented by our own experience in drug and medical technology development and independent searches of the literature. We can provide no assurance that material provided by the Company was complete and accurate although we have no reason to suspect that this was not the case. We have exercised all due care in verifying the information provided and found no reason to doubt the reliability of the information. We also relied on published and Company-confidential technical reports as the main sources of past research but we were not able to review raw data or methods of analysis therein or confirm that these reports contained all relevant findings.

A draft of this report was supplied to Imugene to confirm factual accuracy and some changes were made to reflect their comments.

Acuity does not guarantee that the outcomes described in this report will actually occur because of possible changes in the markets and the Company's own actions, which are beyond our ability to forecast.

Acuity has acted independently in preparing this report and neither its Director nor staff have any pecuniary or other interest in Imugene or Vaxinia, their related entities or associates that could reasonably be regarded as affecting its ability to give an unbiased opinion. Acuity will receive normal professional fees for the preparation of this report and, with the exception of these fees, will not receive any other direct or indirect benefits.

Acuity does not hold an Australia Financial Services Licence and provides no opinions or recommendations relating to the suitability of Imugene as an investment, acquisition or for any other purpose, and provides no advice concerning the proposed transaction with Vaxinia.

The cash flow model used in the valuation makes the assumption that Imugene will, or will have, sufficient funds to support further development and maintenance of the IP, and to meet other obligations under proposed licensing agreements. Without adequate funds, the value of the IP may not be realised. Additionally, delays in research and/or in securing collaborations could impact severely on the valuation.

In preparing this report we have had regard to the following regulatory and professional standards:

- RG 111, Content of expert reports;
- RG 112, Independence of experts;
- RG 170, Prospective financial information; and
- APES 225, Valuation Services.

## 8. Experience and Qualifications

Acuity provides management consulting to technology-based companies. The company is skilled in the development of business plans and the technical, commercial and financial analyses of engineering and science-based projects. An area of special interest is the provision of advice to investors and financial institutions on the funding of high technology R&D and the exploitation of outcomes.

The current valuation was undertaken by Acuity's Managing Director, David Randerson. Dr Randerson specializes in the valuation of intangible assets, and business entities whose main assets are intangibles, with particular expertise in IP and IPR&D. Valuations have been performed for purposes of licensing, capital raising and investment, sale, depreciation and amortization, impairment, purchase price allocation, consolidation, mergers, acquisitions, stock options and goodwill.

Dr Randerson has experience with valuing pharmaceuticals, stem cells, medical devices, diagnostics, agriculture, biochemical and cell culture technologies and environmental products. In the fields of physical and applied sciences, he has valued software, internet, electronics, telecommunications, mining and petrochemical projects, process engineering, production engineering and automotive technologies. Research-in-process is of particular interest to Dr Randerson.

Dr Randerson has a Bachelor of Chemical Engineering (Monash University), Master of Science in Applied Science (UNSW) and a Doctorate of Philosophy in Biomedical Engineering (UNSW). He is a Fellow of the Australian Institute of Company Directors and a member of the Institution of Chemical Engineers. He has worked in academia at the University of Munich and University of Queensland, and in Industry with Rio Tinto, Union Carbide and Johnson & Johnson. He was founder and managing director of one of Australia's first publicly listed biotechnology companies, specializing in the production of therapeutic monoclonal antibodies and recombinant proteins.

An understanding of physical and life sciences, research and development, project management, probability and statistics, discounted cash flow methodologies, real options analysis, life cycle forecasting, engineering depreciation and functional obsolescence analysis, are amongst the important tools in which Dr Randerson has competence.

As principal of Acuity for 30 years, Dr Randerson has undertaken in excess of 300 detailed valuations in biomedical sciences and 120 in applied sciences.

# EGM Registration Card

**If you are attending the meeting in person, please bring this with you for Securityholder registration.**

IMUGENE

**Imugene Limited | ACN 009 179 551**

[EntityRegistrationDetailsLine1Envelope]
[EntityRegistrationDetailsLine2Envelope]
[EntityRegistrationDetailsLine3Envelope]
[EntityRegistrationDetailsLine4Envelope]
[EntityRegistrationDetailsLine5Envelope]
[EntityRegistrationDetailsLine6Envelope]

**[HolderNumber]**

**Holder Number:**
[HolderNumber]

## Vote by Proxy: IMU

Your proxy voting instruction must be received by **10:00am (Melbourne Time) on Saturday 16 November 2019** being **not later than 48 hours** before the commencement of the Meeting. Any Proxy Voting instructions received after that time will not be valid for the scheduled Meeting.

## SUBMIT YOUR PROXY VOTE ONLINE

### Vote online at https://investor.automic.com.au/#/loginsah

**Login & Click on 'Meetings'. Use the Holder Number as shown at the top of this Proxy Voting form.**

- ✓ **Save Money:** help minimise unnecessary print and mail costs for the Company.
- ✓ **It's Quick and Secure:** provides you with greater privacy, eliminates any postal delays and the risk of potentially getting lost in transit.
- ✓ **Receive Vote Confirmation:** instant confirmation that your vote has been processed. It also allows you to amend your vote if required.

## SUBMIT YOUR PROXY VOTE BY PAPER

**Complete the form overleaf in accordance with the instructions set out below.**

### YOUR NAME AND ADDRESS

The name and address shown above is as it appears on the Company's share register. If this information is incorrect, and you have an Issuer Sponsored holding, you can update your address through the investor portal: **https://investor.automic.com.au/#/home** Shareholders sponsored by a broker should advise their broker of any changes.

### VOTING UNDER STEP 1 - APPOINTING A PROXY

If you wish to appoint someone other than the Chairman of the Meeting as your proxy, please write the name of that Individual or body corporate. A proxy need not be a Shareholder of the Company. Otherwise if you leave this box blank, the Chairman of the Meeting will be appointed as your proxy by default.

### DEFAULT TO THE CHAIRMAN OF THE MEETING

Any directed proxies that are not voted on a poll at the Meeting will default to the Chairman of the Meeting, who is required to vote these proxies as directed. Any undirected proxies that default to the Chairman of the Meeting will be voted according to the instructions set out in this Proxy Voting Form, including where the Resolutions are connected directly or indirectly with the remuneration of KMP

### VOTES ON ITEMS OF BUSINESS – PROXY APPOINTMENT

You may direct your proxy how to vote by marking one of the boxes opposite each item of business. All your shares will be voted in accordance with such a direction unless you indicate only a portion of voting rights are to be voted on any item by inserting the percentage or number of shares you wish to vote in the appropriate box or boxes. If you do not mark any of the boxes on the items of business, your proxy may vote as he or she chooses. If you mark more than one box on an item your vote on that item will be invalid.

### APPOINTMENT OF SECOND PROXY

You may appoint up to two proxies. If you appoint two proxies, you should complete two separate Proxy Voting Forms and specify the percentage or number each proxy may exercise. If you do not specify a percentage or number, each proxy may exercise half the votes. You must return both Proxy Voting Forms together. If you require an additional Proxy Voting Form, contact Automic Registry Services.

### SIGNING INSTRUCTIONS

You must sign this form as follows in the spaces provided

**Individual**: Where the holding is in one name, the Shareholder must sign.

**Joint holding**: Where the holding is in more than one name, all of the Shareholders should sign.

**Power of attorney**: If you have not already lodged the power of attorney with the registry, please attach a certified photocopy of the power of attorney to this Proxy Voting Form when you return it.

**Companies**: To be signed in accordance with your Constitution. Please sign in the appropriate box which indicates the office held by you.

**Email Address**: Please provide your email address in the space provided.

**By providing your email address, you elect to receive all communications despatched by the Company electronically (where legally permissible) such as a Notice of Meeting, Proxy Voting Form and Annual Report via email.**

### CORPORATE REPRESENTATIVES

If a representative of the corporation is to attend the Meeting the appropriate 'Appointment of Corporate Representative' should be produced prior to admission. A form may be obtained from the Company's share registry online at https://automic.com.au.

### ATTENDING THE MEETING

Completion of a Proxy Voting Form will not prevent individual Shareholders from attending the Meeting in person if they wish. Where a Shareholder completes and lodges a valid Proxy Voting Form and attends the Meeting in person, then the proxy's authority to speak and vote for that Shareholder is suspended while the Shareholder is present at the Meeting.

### POWER OF ATTORNEY

If a representative as power of attorney of a Shareholder of the Company is to attend the Meeting, a certified copy of the Power of Attorney, or the original Power of Attorney, must be received by the Company in the same manner, and by the same time as outlined for proxy forms.

## Contact

**Return your completed form**

**BY MAIL**
Automic
GPO Box 5193
Sydney NSW 2001

**IN PERSON**
Automic
Level 5, 126 Phillip Street
Sydney NSW 2000

**BY EMAIL**
meetings@automicgroup.com.au

**All enquiries to Automic**

**WEBCHAT**
https://automic.com.au/

**PHONE**
1300 288 664 (Within Australia)
+61 2 9698 5414 (Overseas)

AUTOMIC

## STEP 1: Appoint Your Proxy

### Complete and return this form as instructed only if you do not vote online

I/We being a Shareholder entitled to attend and vote at the Extraordinary General Meeting of Imugene Limited, to be held at **10:00am (Melbourne Time) on Monday 18 November 2019 at Level 3, 62 Lygon Street, Carlton, Victoria, Australia 3053** hereby:

**Appoint the Chairman of the Meeting (Chair)** OR if you are not appointing the Chairman of the Meeting as your proxy, please write in the box provided below the name of the person or body corporate you are appointing as your proxy or failing the person so named or, if no person is named, the Chair, or the Chair's nominee, to vote in accordance with the following directions, or, if no directions have been given, and subject to the relevant laws as the proxy sees fit and at any adjournment thereof.

**The Chair intends to vote undirected proxies in favour of all Resolutions in which the Chair is entitled to vote.**
Unless indicated otherwise by ticking the "for"," against" or "abstain" box you will be authorising the Chair to vote in accordance with the Chair's voting intention.

## STEP 2: Your Voting

| Resolutions | | For | Against | Abstain |
|---|---|---|---|---|
| 1. | Approval Of Allotment And Issue Of Consideration Shares To Unrelated Vaxinia Shareholders | ☐ | ☐ | ☐ |
| 2. | Approval Of Allotment And Issue Of Consideration Shares To Related Parties: Paul Hopper And Persons And Entities Related To Him | ☐ | ☐ | ☐ |
| 3. | Approval Of Acquisition Of Vaxinia Pty Ltd, A Related Party Of Imugene | ☐ | ☐ | ☐ |
| | | ☐ | ☐ | ☐ |
| | | ☐ | ☐ | ☐ |

***Please note:*** *If you mark the abstain box for a particular Resolution, you are directing your proxy not to vote on that Resolution on a show of hands or on a poll and your votes will not be counted in computing the required majority on a poll.*

## STEP 3: Sign Here + Contact Details

### SIGNATURE OF SECURITYHOLDERS – THIS MUST BE COMPLETED

| Individual or Securityholder 1 | Securityholder 2 | Securityholder 3 |
|---|---|---|
| | | |
| Sole Director and Sole Company Secretary | Director | Director / Company Secretary |

Contact Name:

Email Address:

Contact Daytime Telephone

Date (DD/MM/YY) ☐☐ / ☐☐ / ☐☐

**By providing your email address, you elect to receive all of your communications despatched by the Company electronically (where legally permissible).**

[HolderNumber] IMU

L [HolderNumber]