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TBG Acquisition – Independent Expert's Report

Melbourne, Australia, 19 October 2015. Progen Pharmaceuticals Limited (**Company**) (ASX: PGL, OTC: PGLA) refers to its announcement of 16 October 2015 relating to the proposed acquisition of 100% of the issued capital in TBG Inc (**TBG**) from Medigen Biotechnology Corporation (**Medigen**) (the **TBG Acquisition**).

The Company commissioned William Buck Corporate Advisory Services (NSW) Pty Ltd to prepare an Independent Expert's Report (IER) to express an opinion as to whether or not the TBG Acquisition is fair and reasonable to the non-associated shareholders of the Company. A copy of the IER is attached.

For the reasons set out in the IER, the Independent Expert has concluded that the TBG Acquisition **is fair and reasonable** to shareholders.

Mr Jitto Arulampalam, who has been invited to continue as the Non-Executive Chairman in the new TBG business, said today "this transaction provides the Company an opportunity to have a complete restructure of its existing operations and bring in a globally exciting diagnostic business with significant future potential to increase value for our long suffering shareholders."

As previously announced, a Notice of General Meeting, including a copy of the IER, will be sent to shareholders in the coming weeks.

ENDS

About Progen Pharmaceuticals Ltd
Progen Pharmaceuticals Limited is a biotechnology company committed to the discovery, development and commercialization of small molecule pharmaceuticals primarily for the treatment of cancer. Progen has built a focus and strength in anti-cancer drug discovery and development. www.progen-pharma.com

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William Buck

Progen Pharmaceuticals Limited

Independent Expert's Report and Financial Services Guide

16 October 2015

16 October 2015

The Directors
Progen Pharmaceuticals Limited
Level 18, 101 Collins Street
MELBOURNE VIC 3000

Dear Directors,

Progen Pharmaceuticals Limited - Independent Expert's Report

1. Introduction

On 1 May 2015 ("**Announcement Date**"), Progen Pharmaceuticals Limited ("**Progen**" or the "**Company**") announced that it had signed a binding term sheet to acquire 100% of issued share capital of TBG Inc. ("**TBG**") from Medigen Biotechnology Corp. ("**Medigen**") (the "**TBG Acquisition**"). Progen will issue 101,722,974 new ordinary shares to Medigen as consideration for the TBG Acquisition.

Progen is a biotechnology company, focused on developing pharmaceutical therapeutics for the treatment of human diseases in Australia and the United States. Progen also provides contract manufacturing services related to biological products. As at 30 April 2015, Progen had a market capitalisation of $11.1 million.

TBG is a biotechnology company focused on the global molecular diagnostics industry and is involved in the development, manufacture and marketing of nucleic acid testing kits and associated services. TBG is based in Taipei City, Taiwan and has recently opened manufacturing facilities in Xiamen, China.

The TBG Acquisition is conditional upon Progen raising capital in the range of $10 million to $14.5 million at an issue price of $0.21 per Progen share (the "**Proposed Capital Raising**"). We refer to the TBG Acquisition and the Proposed Capital Raising collectively as the "**Proposed Transaction**".

Medigen currently has a 19.7% interest in Progen. The Proposed Transaction will result in Medigen's interest in Progen increasing to between 49.8% and 55.0%, depending on the final quantum of the Proposed Capital Raising.

Further details of the Proposed Transaction are set out in Section 5.4 of this report.

The Proposed Transaction requires the approval of Non-Associated Shareholders under Section 611 of the Corporations Act (Cth) (the "**Act**") and ASX Listing Rule 10.1.

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The Directors of Progen ("**Directors**") have engaged William Buck Corporate Advisory Services (NSW) Pty Limited ("**William Buck**" or "**we**" or "**us**" or "**our**" as appropriate) to prepare an Independent Expert's Report ("**Report**"). The purpose of our Report is to express an opinion as to whether or not the Proposed Transaction is fair and reasonable to the Non-Associated Shareholders of Progen.

This Report is to accompany the Notice of General Meeting and Explanatory Memorandum ("**Explanatory Memorandum**") being provided to the shareholders of Progen ("**Shareholders**") and has been prepared to assist the Directors in fulfilling their obligation to provide Shareholders with full and proper disclosure so as to enable them to assess the merits of the Proposed Transaction and to assist them in their consideration of whether or not to approve resolutions relating to the Proposed Transaction.

Mr Mark Calvetti and Mr Daniel Coote of William Buck were responsible for the preparation of this Report. Details of their experience and qualifications are set out in Section 12.1.

Further information regarding William Buck in relation to the preparation of this Report is set out in Appendix 12.

2. Opinion

We have considered the terms of the Proposed Transaction and conclude that the Proposed Transaction is both **fair** and **reasonable** to the Non-Associated Shareholders of Progen.

Basis of the Evaluation of the Proposed Transaction

In our opinion, the Proposed Transaction will be fair and reasonable if:

- the value of a share in Progen prior to the Proposed Transaction on a control basis is not greater than the value of a share in Progen subsequent to the Proposed Transaction on a minority basis;
- on balance, the advantages to the Non-Associated Shareholders of approving the Proposed Transaction outweigh the disadvantages; and,
- on balance, the disadvantages to the Non-Associated Shareholders of not approving the Proposed Transaction outweigh the advantages.

Where applicable, we have considered whether or not appropriate premiums (for control or significant influence) have been reflected in our valuation calculations.

Assessment of Fairness of the Proposed Transaction

The table below sets out our comparison of the fair value of Progen shares prior to completion of the Proposed Transaction on a controlling interest basis with our assessment of the fair value of Progen shares subsequent to completion of the Proposed Transaction on a minority basis (incorporating the financial effects of the Proposed Transaction and expected dilution of the Non-Associated Shareholders resulting from the TBG Acquisition and the Proposed Capital Raising (see Section 5 for further details of the Proposed Transaction).

Table 1 – Proposed Transaction fairness assessment

	Ref	Low	High
Valuation of Progen prior to the Proposed Transaction			
Quoted price of listed securities	10.14	$ 0.231	$ 0.249
Sum of parts method	10.2.1	$ 0.063	$ 0.171
Adopted Progen value (controlling interest basis)	**10.3**	**$ 0.171**	**$ 0.249**
Valuation of Progen subsequent to the Proposed Transaction			
Adopted Progen value (controlling interest basis)	Note 1	9,453,789	13,766,043
Proposed Capital Raising	5.2	14,500,000	14,500,000
Cost of the Proposed Capital Raising	5.2	(450,000)	(450,000)
TBG equity value (net of initial $10.5 million funding)	11.1	10,058,298	67,843,326
Progen value subsequent to the Proposed Transaction (controlling interest basis)		**33,562,086**	**95,659,369**
Minority interest discount	Note 2	-9.1%	-9.1%
Progen value subsequent to the Proposed Transaction (minority interest basis)		**30,510,988**	**86,963,063**
Ordinary issued Progen shares subsequent to the Proposed Transaction	5.4	226,055,908	226,055,908
Progen value per share subsequent to the Proposed Transaction (minority interest basis)		**$ 0.135**	**$ 0.385**

Source: William Buck analysis

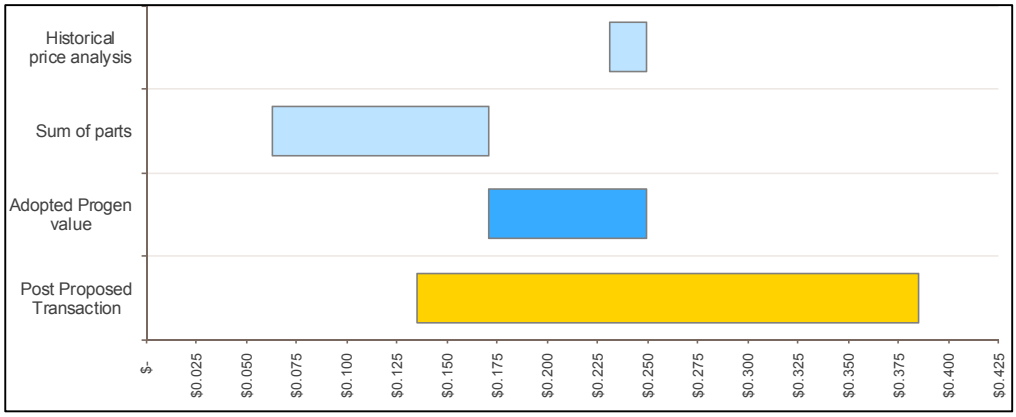
Notes:

1 *Calculated as 55,285,315 Progen shares on issue prior to the Proposed Transaction multiplied by our adopted valuation range of $0.171 to $0.249 per Progen share*

2 *The calculation of the value of Progen shares on a minority basis subsequent to the Proposed Transaction includes a minority discount of 9.1%. We have calculated the minority discount applicable to Progen shares by reference to our expectation of the control premium (10% - refer Section 10.1.3) relevant to valuing shares in Progen using the following formula: Minority discount = [1 – (1/(1 + Control Premium))]*

This analysis is presented visually in the figure below.

Figure 1 – Proposed value per share, prior to (blue) and post (yellow) the Proposed Transaction



Source: William Buck analysis

Our analysis shows the value of a Progen share on a minority interest basis subsequent to the Proposed Transaction (incorporating the financial effects of the Proposed Transaction) to be in the range of $0.135 to $0.385 per share. This compares to the fair value of Progen shares on a controlling interest basis prior to the Proposed Transaction in the range of $0.171 to $0.249.

Fairness Conclusion

Establishing valuation ranges for Progen and TBG has not been straightforward.

Progen has incurred significant losses in recent financial years and its key assets are currently:

- PI-88, a research product for which disappointing Phase 3 clinical trial results were reported on 28 July 2014;
- PG545, an early stage research product in Phase 1 clinical trials for which Progen lacks the cash resources to fund through to Phase 2 clinical trials;
- PharmaSynth, a pharmaceuticals contract manufacturer which has reported mixed results in recent financial years and a $1.8 million operating loss for the year ended 30 June 2015; and
- a $51.1 million deferred tax asset not recognised in the accounts which requires Progen to be profitable in order to be utilised.

TBG is an early stage company currently incurring losses due to its investment in a substantial product pipeline and product manufacturing facilities and accreditation in China. A large proportion of forecast revenue and profitability for TBG comes from products for which development is not yet completed in areas of molecular diagnostics that are adjacent to TBG's core historical experience around HLA typing.

Prior to the Proposed Transaction and on a controlling interest basis, we have established valuation parameters for Progen in the range of $0.063 per share, reflecting its net asset backing as at 30 June 2015, to $0.249 per share, reflecting Progen's volume weighted average share price in the period immediately subsequent to the 28 July 2014 PI-88 announcement to 30 April 2015. As set out above, our adopted Progen share value range prior to the Proposed Transaction is $0.171 to $0.249, on a controlling interest basis, reflecting at the lower end of the range additional value in excess of net asset backing for Progen's key intangible assets.

Subsequent to the Proposed Transaction, we have valued Progen in the range of $0.135 to $0.385, on a minority interest basis, reflecting the Proposed Capital Raising (at $14.5 million) and the TBG Acquisition. As discussed above, TBG's wide valuation range reflects its early stage in the development of its product portfolio and business. The lower end of our TBG valuation range also reflects sensitivities applied by William Buck to the TBG Forecasts.

On balance, based on our respective valuations of Progen prior to the Proposed Transaction (on a controlling interest basis) and of Progen subsequent to the Proposed Transaction, incorporating the TBG Acquisition and Proposed Capital Raising (on a minority interest basis), in our opinion we consider the Proposed Transaction to be fair from the perspective of the Non-Associated Shareholders of Progen.

Assessment of Reasonableness of the Proposed Transaction

We have considered the following factors in determining whether or not the Proposed Transaction is reasonable to the Non-Associated Shareholders of Progen.

Advantages of approving the Proposed Acquisition

We consider the following to be advantages of approving the Proposed Transaction:

- **The Proposed Transaction is fair:** We have assessed the Proposed Transaction to be "fair";
- **Opportunity to deliver more stable profitability and operating cash flows:** Provided TBG is able to deliver on its forecasts, the TBG Acquisition should provide Progen with more stable operating profitability and cash flows. As TBG is developing molecular diagnostic products and related analysis equipment, rather than human therapeutic products, its product development, clinical trial, regulatory approval and commercialisation process is expected to be less onerous and less uncertain than that experienced historically by Progen in relation to its research product portfolio.
- **Exposure to rapidly growing Chinese In Vitro Diagnostics and Molecular Diagnostics industries:** As discussed in Appendix C, China is currently the world's fourth largest market for IVD and is forecast to grow to become the second largest market in the world by 2020. Within Chinese IVD, molecular diagnostics is forecast for rapid growth as China implements policies to increase the efficiency of its Healthcare system through automation and early detection of diseases in order to mitigate the pressures on its Healthcare system being created by an aging population, increased health awareness within the Chinese population and increases in rates of infectious and chronic diseases.
- **The Proposed Transaction funds TBG's strategic plan:** The structure of the Proposed Transaction, including the Proposed Capital Raising, provides immediate funds for TBG to execute it's strategic plan, including capital expenditure in relation to its Xiamen facility, working capital requirements and advancement of its product development pipeline. If the high end of the Proposed Capital Raising can be achieved, excess cash will also be available to fund other working capital requirements and growth initiatives.
- **Potential for increased liquidity:** The Proposed Transaction is likely to increase Progen's market capitalisation which may result in increased coverage from capital markets analysts, improved access to equity capital market opportunities and increased share trading liquidity.

Disadvantages of approving the Proposed Acquisition

We consider the following to be disadvantages of approving the Proposed Transaction:

- **Non-Associated Shareholders' interests in the Company could be significantly diluted:** By approving the Proposed Transaction the interests of the Non-Associated Shareholders will be diluted from 80.3% to between 11.7% and 50.2%, depending on the level of participation by Non-Associated Shareholders in the Proposed Capital Raising. The Proposed Capital Raising is open to all Non-Associated Shareholders. It is our understanding that Medigen does not plan to participate in the Proposed Capital Raising.
- **Increased Medigen interest:** the Proposed Transaction is likely to result in Medigen's interest in Progen increasing from 19.7% to between 49.8% and 55.0%, depending on the final quantum of the Proposed

Capital Raising. The presence of such significant shareholding generally both reduces the liquidity of a Company's share trading and reduces the likelihood that the Company will be the target of any potential takeover activity.

Advantages and disadvantages of not implementing the Proposed Transaction

In our view, the significant advantages or disadvantages of rejecting the Proposed Transaction primarily relate to the reverse of the matters noted above.

We have also considered the following disadvantage of rejecting the Proposed Transaction:

- **Progen will require an alternative source of funding:** As discussed in Section 7.4.1, BDO's 30 June 2015 audit opinion included an emphasis of matter noting the existence of a material uncertainty regarding Progen's ability to continue as a going concern. Progen's 30 June 2015 Preliminary Final Report notes that Progen's current cash reserves and inflows are insufficient to continue to fund operations and based on current and projected expenditure levels, Management contemplates that a capital raising may be required to fund operations. Progen has not yet identified an alternative source of funding to the Proposed Transaction.

Reasonableness conclusion

In our opinion, based on a consideration of the above, the Proposed Transaction is considered reasonable from the perspective of the Non-Associated Shareholders of Progen as:

- on balance, the advantages of approving the Proposed Transaction outweigh the disadvantages of approving it to the Non-Associated Shareholders; and
- on balance, the disadvantages of rejecting the Proposed Transaction outweigh any advantages of rejecting it to the Non-Associated Shareholders.

3. General Advice and Other

General advice

In forming our opinion, we have considered the interests of the Non-Associated Shareholders as a whole. This advice therefore does not consider the financial situation, objectives or needs of the individual Non-Associated Shareholders. It is neither practical nor possible to assess the implication of the Proposed Transaction on individual Non-Associated Shareholders as their individual financial circumstances are not known.

Some Non-Associated Shareholders may place a different emphasis on various aspects of the Proposed Transaction from that adopted in our Report. Accordingly, individual Non-Associated Shareholders may reach different conclusions on whether or not the Proposed Transaction is fair and reasonable to them and each individual shareholder must take into account his or her own circumstances when deciding whether or not to vote in favour or against the resolutions relating to the Proposed Transaction. Shareholders should seek their own independent professional advice to assist them in their decision, taking into account their preferences and expectations.

Other

William Buck is an Authorised Representative under an appropriate Australian Financial Services Licence. Accordingly, we are required to provide a Financial Services Guide in situations where we may be taken as providing financial product advice. A copy of William Buck's Financial Services Guide is set out in Section 4 of this Report.

Our Report has been prepared solely for use of the Directors of Progen, and for the purpose set out herein. William Buck does not accept any responsibility for the use of our report outside this purpose. Except in accordance with the stated purpose, no extract, quote, or copy of our Report, in whole or in part, should be reproduced without the written consent of William Buck, as to the form and context in which it may appear.

Our opinion is based solely on information available as at the date of this Report as set out in Appendix A. We have not undertaken to update our report for events of circumstances arising after the date of this Report other than those of a material nature which would impact on our opinion. We refer readers to the limitations and reliance on information sections as set out in Section 6 of our Report.

The above opinion should be considered in conjunction with, and not independently of, the information set out in the remainder of this Report including the appendices.

Yours faithfully,

William Buck Corporate Advisory Services (NSW) Pty Limited
ABN 50 133 845 637
Authorised Representative No. 333393
AFSL 240769

4. Financial Services Guide

Dated: 16 October 2015

William Buck Corporate Advisory Services (NSW) Pty Ltd ABN 50 133 845 637 ("**William Buck**" or "**we**" or "**us**" or "**our**" as appropriate) has been engaged to issue general financial product advice in the form of a report to be provided to you.

Financial Services Guide

In the above circumstances we are required to issue to you, as a retail client, a Financial Services Guide ("**FSG**"). This FSG is designed to help retail clients make a decision as to their use of general financial product advice and to ensure that we comply with our obligations as an authorised representative of a financial services licensee.

The FSG includes information about:

- who we are and how we can be contacted;
- the services we are authorised to provide as an Authorised Representative of William Buck Wealth Advisors (NSW) Pty Ltd (Licence No: 240769);
- remuneration that we and/or our staff and any associates receive in connection with the general financial product advice;
- any relevant associations or relationships we have; and
- our complaints handling procedures and how you may access them.

Financial Services we are Licensed to Provide

We are an authorised representative of William Buck Wealth Advisors (NSW) Pty Ltd who holds an Australian Financial Services Licence. We are authorised to provide financial product advice in relation to various financial products such as securities, derivatives, interests in managed fund investment schemes, stocks or bonds to retail and wholesale clients.

We provide financial product advice by virtue of an engagement to issue a report in connection with a financial product of another person. Our report will include a description of the circumstances of our engagement and identify the person who has engaged us. You will not have engaged us directly but will be provided with a copy of the report as a retail client because of your connection to the matters in respect of which we have been engaged to report.

Any report we provide is provided on our own behalf as an authorised representative of a financial services licensee authorised to provide the financial product advice contained in the report.

General Financial Product Advice

In our report we provide general financial product advice, not personal financial advice, because it has been prepared without taking into account your personal objectives, financial situation or needs.

You should consider the appropriateness of this general advice having regard to your own objectives, financial situation and needs before you act on the advice. Where the advice relates to the acquisition or possible acquisition of a financial product, you should also obtain a product disclosure statement relating to the product and consider that statement before making any decision about whether to acquire the product.

Benefits that we may Receive

We are entitled to receive a fee of $67,000, excluding GST, for preparation of this Report. These fees were agreed with, and paid by, the person who engaged us to provide the Report. Fees will be agreed on either a fixed fee or time cost basis.

Except for the fees referred to above, neither William Buck, nor any of its directors, employees or related entities, receive any pecuniary benefit or other benefit, directly or indirectly, for or in connection with the provision of the report.

Remuneration or other Benefits Received by our Employees

All our employees receive a salary. Our employees are eligible for bonuses based on overall productivity but not directly in connection with any engagement for the provision of a report.

Referrals

We do not pay commissions or provide any other benefits to any person for referring customers to us in connection with the reports that we are authorised to provide.

Associations and Relationships

William Buck Corporate Advisory Services (NSW) Pty Ltd is a wholly owned subsidiary of William Buck (NSW) Pty Ltd.

Complaints Resolution

Internal Complaints Resolution Process

As an authorised representative of a holder of an Australian Financial Services Licence, we are required to have a system for handling complaints from persons to whom we provide financial product advice. All complaints must be in writing, addressed to The Compliance Manager, William Buck, Level 29, 66 Goulburn Street, Sydney NSW 2000.

When we receive a written complaint we will record the complaint, acknowledge receipt of the complaint within 15 days and investigate the issues raised. As soon as practical, and not more than 45 days after receiving the written complaint, we will advise the complainant in writing of our determination.

Referral to External Dispute Resolution Scheme

A complainant not satisfied with the outcome of the above process, or our determination, has the right to refer the matter to the Financial Ombudsman Service. The Financial Ombudsman Service is an independent company that has been established to provide free advice and assistance to consumers to help in resolving complaints relating to the financial service industry.

Further details about the Financial Ombudsman Service are available at the website www.fos.org.au or by contacting them directly at: the Financial Ombudsman Service, GPO Box 3, Melbourne VIC 3001, or by telephone on 1300 780 808.

Professional Indemnity Insurance

William Buck has professional indemnity insurance in place which covers any work done by us, as an authorised representative of William Buck Wealth Advisors (NSW) Pty Ltd and by representatives/employees after they cease to work for us. The compensation arrangements we have in place comply with sec.912B of the Corporations Act.

Contact Details

You may contact us at William Buck, Level 29, 66 Goulburn Street, Sydney, NSW 2000 or by telephone on (02) 8263 4000

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5. The Proposed Transaction

5.1 Overview of Proposed Transaction

On 1 May 2015, Progen announced that it had signed a binding term sheet to acquire 100% of issued share capital of TBG from Medigen. Progen will issue 101,722,974 new ordinary shares to Medigen as consideration for the acquisition of TBG.

At the date of this Report, Progen and Medigen were in the process of finalising a share sale and purchase agreement with respect to the Proposed Transaction.

Per the binding term sheet, the Proposed Transaction is subject to:

- Due diligence by both Progen and Medigen;
- Necessary regulatory approvals;
- Progen shareholder approval; and
- The Proposed Capital Raising.

5.2 Overview of Proposed Capital Raising

As a condition of the binding term sheet for the Proposed Transaction, Progen proposes to raise up to $14.5 million via the issue of up to 69,047,619 new $0.21 fully paid ordinary shares under a prospectus ("**Prospectus**").

The minimum proposed capital raising under the Prospectus is $10 million, through the issue of 47,619,048 new $0.21 fully paid ordinary shares.

Costs of the Proposed Capital Raising are expected to total $450,000 (assuming a capital raising of $14.5 million).

5.3 Pre-Transaction Progen Capital Structure

Prior to completion of the Proposed Transaction, Progen had on issue:

- 55,285,315 fully paid ordinary shares; and
- 2,019,200 options over fully paid ordinary shares.

As at the date of this Report, all options currently issued by Progen were out of the money in comparison with both the prevailing share price and the 30 day volume weighted average price ("**VWAP**"). Management's view is that these options are currently unlikely to be converted into fully paid shares in Progen and consequently, we have excluded the options from our analysis of the effects of the Proposed Transaction below.

A summary of Progen options over fully paid ordinary shares as at 30 June 2015 is set out in Section 7.3.

5.4 Potential Post-Transaction Progen Capital Structure

The following table sets out Progen's current and potential issued share capital assuming completion of the Proposed Transaction. The analysis assumes that Progen's top 10 shareholders do not participate in the Proposed Capital Raising. It is our understanding that Medigen does not plan to participate in the Proposed Capital Raising.

Table 2 – Current and Potential Issued Progen Shares

Shareholder	Pre-Transaction fully paid ordinary shares		TBG Acquisition	Proposed Capital Raising ($14.5 million)	Post-Transaction fully paid ordinary shares	
	# shares	% interest	# shares	# shares	# shares	% interest
Medigen Biotechnology Corp	10,892,964	19.7%	101,722,974	-	112,615,938	49.8%
HSBC Custody Nominees & BNP Paribas Nominees Pty Ltd[1]	14,838,888	26.8%	-	-	14,838,888	6.6%
Miss Fu Mei Wang	2,157,128	3.9%	-	-	2,157,128	1.0%
US Control Account c/- Computershare Trust	2,106,851	3.8%	-	-	2,106,851	0.9%
Ms Wen-Min Wang	1,576,289	2.9%	-	-	1,576,289	0.7%
Mr Ung-Fong Lu	1,571,020	2.8%	-	-	1,571,020	0.7%
Mrs Lee Li Hsueh Yang	1,322,558	2.4%	-	-	1,322,558	0.6%
Mr Hsien-jung Yang & Mrs Ma Shu-Hwa Yang	1,001,000	1.8%	-	-	1,001,000	0.4%
Mr Chi-Liang Yang	945,984	1.7%	-	-	945,984	0.4%
Mr Min-Hua Yeh	844,894	1.5%	-	-	844,894	0.4%
Top 10 shareholders	**37,257,576**	**67.4%**	**101,722,974**	**-**	**138,980,550**	**61.5%**
Other shareholders	18,027,739	32.6%	-	69,047,619	87,075,358	38.5%
Total	**55,285,315**	**100.0%**	**101,722,974**	**69,047,619**	**226,055,908**	**100.0%**

Source: Progen share register as at 13 October 2015 and William Buck analysis

Note 1: Progen has informed us that it is not aware of any other shareholder of Progen holding greater than or equal to a 20% interest in the ordinary equity of the Company

Medigen controlled 19.7% of the issued share capital of Progen prior to completion of the Proposed Transaction. As set out above, Medigen's interest in Progen will increase from 19.7% to 49.8%, assuming a capital raising of $14.5 million, and to 55.0%, assuming a capital raising of $10 million.

6. Scope and Limitations

6.1 Regulatory Background

Corporations Act 2001

Section 606 of the Act does not allow a person to acquire a relevant interest in the issued voting shares of a listed company if, by entering into the transaction, their (or someone else's) voting power in the company increases:

- From 20% or below to more than 20%; or
- From a starting point above 20% and below 90%.

Section 611 of the Act provides an exemption to Section 606 if the relevant transaction is approved by a resolution of the shareholders at a general meeting called for that purpose. Section 611 requires shareholders to be given all relevant information known to the person making the acquisition, their associates or the company, which is material to the proposal.

As discussed in Section 5.4, following completion of the Proposed Transaction, Medigen's interest in Progen will increase from 19.7% to between 49.8% and 55.0%, depending on the quantum of the Proposed Capital Raising.

While Section 611 does not explicitly state that an expert's opinion is required in relation to the Proposed Transaction, regulatory guidance issued by the Australian Securities and Investments Commission ("**ASIC**") states that it is the Directors' obligation to provide shareholders with full and proper disclosure to enable them to assess the merits of a proposed transaction for the purpose of assisting them to decide whether to approve any resolutions relating to the transaction. This obligation may be satisfied by commissioning an independent expert's report on whether the proposed transaction is "fair and reasonable" to non-associated shareholders.

ASX Listing Rules

The Proposed Transaction is subject to the provisions of ASX Limited ("**ASX**") Listing Rules ("**Listing Rules**"). ASX Listing Rule10.1 requires the approval of holders of an entity's ordinary securities where it is proposed to acquire a substantial asset from, or dispose of a substantial asset to:

- a related party or an associate of a related party;
- a subsidiary or an associate of a subsidiary; or
- a substantial shareholder or an associate of a substantial shareholder.

A substantial shareholder is defined by the Listing Rules as a shareholder with a relevant interest at any time in the six months prior to the Proposed Transaction, in at least 10% of the total votes attached to the voting securities.

An asset is substantial if its value, or the value of the consideration for it, is greater than 5% of the total equity interests of the entity as at the date of the last audited accounts.

The Proposed Transaction meets the definition of a substantial asset and is with Progen's largest shareholder, namely Medigen.

Regulatory guidance issued by ASIC states that it is the Directors' obligation to provide shareholders with full and proper disclosure to enable them to assess the merit of the Proposed Transaction and to decide whether to agree by resolution to the Proposed Transaction. This obligation may be satisfied by commissioning an

independent expert's report on whether the proposed transaction is "fair and reasonable" to the non-associated shareholders.

The non-associated shareholders are those shareholders in Progen whose votes are not to be disregarded in voting on the resolutions relating to the Proposed Transaction ("**Non-Associated Shareholders**").

6.2 Purpose and Scope

Purpose

William Buck has been appointed by the Directors of Progen to prepare an independent expert's report expressing our opinion as to whether or not the Proposed Transaction is fair and reasonable to the Non-Associated Shareholders of Progen.

This Report is to accompany the Explanatory Statement being provided to the shareholders of Progen and has been prepared to assist the Directors in fulfilling their obligation to provide shareholders with full and proper disclosure to enable them to assess the merits of the Proposed Transaction and to assist them in their consideration of whether or not to approve the resolutions relating to the Proposed Transaction.

This Report should not be used for any other purpose and we do not accept any responsibility for use outside this purpose. Except in accordance with the stated purpose, no extract, quote or copy of our report, in whole or in part, should be reproduced without the written consent of William Buck, as to the form and context in which it may appear.

Scope

The scope of our procedures undertaken have been limited to those procedures we believed are required in order to form our opinion. Our procedures, in the preparation of this Report, may have involved an analysis of financial information and accounting records. However, the procedures did not include verification work nor did they constitute:

- an audit in accordance with AUS;
- an assurance engagement in accordance with ASAE; or
- a review in accordance with ASRE.

The assessment of whether or not the Proposed Transaction is fair and reasonable will necessarily involve determining the "fair market value" of various securities, assets and interests. For the purposes of our opinion, the term "fair market value" will be defined as the price that would be negotiated in an open and unrestricted market between a knowledgeable, willing, but not anxious purchaser, and a knowledgeable, willing, but not anxious vendor, acting at arm's length.

By their very nature, any valuation assessments are necessarily the subject of uncertainty and volatility and the conclusions arrived at will include considerations that are dependent on the exercise of individual judgement. Accordingly, there is unlikely to be an "indisputable value", and we have expressed our opinion as to values as falling within a likely range.

We have not considered the effect of the Proposed Transaction on the particular circumstances of individual shareholders. Some individual shareholders may place a different emphasis on various aspects of the Proposed Transaction from the one adopted in this Report. Accordingly, individuals may reach different conclusions on whether or not the Proposed Transaction is fair and reasonable to them.

An individual shareholder's decision in relation to the Proposed Transaction may be influenced by their particular circumstances and, therefore, shareholders should seek independent financial advice.

6.3 Basis of Evaluation

As there is no legal definition of the expression fair and reasonable in the Act, we have therefore considered guidance provided by ASIC in its RGs in assessing whether the Proposed Transaction is fair and reasonable from the perspective of the Non-Associated Shareholders. Specifically, we will have regard to the provisions of the following:

- RG 74: Acquisitions approved by members;
- RG 76: Related party transactions;
- RG 111: Content of Expert Reports; and
- RG 112: Independence of Experts.

RG 111 treats "fair" and "reasonable" as two distinct criteria. The transaction is "fair" if the value of the consideration offered is equal to or less than the value of the securities or assets acquired and which are the subject to the transaction. The transaction will be "reasonable" if it is fair, or, despite being not fair, after considering other significant factors, there are sufficient reasons for the shareholders to accept the transaction.

In our opinion, the most appropriate basis on which to evaluate the Proposed Transaction is to assess its likely overall impact on the Non-Associated Shareholders and to form a judgement as to whether the expected benefits outweigh any disadvantages that might result from approving the transaction.

In forming our opinion as to whether or not the Proposed Transaction is fair and reasonable to the Non-Associated Shareholders, we have considered and compared the following:

- the value of a share in Progen prior to the Proposed Transaction on a control basis with the value of a share in Progen subsequent to the Proposed Transaction on a minority basis;
- the advantages and disadvantages to the Non-Associated Shareholders if the Proposed Transaction is approved; and
- the advantages and disadvantages to the Non-Associated Shareholders if the Proposed Transaction is not approved.

Where applicable, we have considered whether or not appropriate premiums (for control or significant influence) have been reflected in our valuation calculations.

In our opinion, the Proposed Transaction is to be judged in terms of its overall effect. It is not meaningful to assess the individual elements of the Proposed Transaction separately.

6.4 Sources of Information

Appendix A to this report sets out details of information referred to and relied upon by us during the course of preparing this Report and forming our opinion.

Progen has agreed to indemnify William Buck, and its owner practice, their partners, directors, employees, officers and agents (as applicable) against any claim arising out of misstatements or omissions in any material supplied by the Company, its subsidiaries, directors or employees, on which we have relied.

6.5 Reliance on Information

This Report is based upon financial and other information provided by Progen and TBG, as detailed in Appendix A of this Report. We have considered and relied upon this information. We believe the information provided to be reliable, complete and not misleading, and have no reason to believe that any material facts have been withheld. The information provided was evaluated through analysis, inquiry and review for the purpose of forming an opinion as to whether the Proposed Transaction is fair and reasonable.

We do not warrant that our inquiries have identified or verified all of the matters which an audit, extensive examination or "due diligence" investigation might disclose. In any event, an opinion as to whether a corporate transaction is fair and reasonable is in the nature of an overall opinion rather than an audit or detailed investigation.

Where we have relied on the views, opinions and judgement of management, the information was also evaluated through analysis, inquiry and review to the extent practical. However, such information is often not capable of direct external verification or validation.

The information provided to William Buck included forecasts / projections and other statements and assumptions about future matters prepared by TBG management ("**TBG Forecasts**"). While William Buck has relied upon the TBG Forecasts in preparing this Report, TBG remains responsible for all aspects of the TBG Forecasts. The TBG Forecasts as supplied to us are based upon assumptions about events and circumstances which have not yet transpired. We have not tested individual assumptions or attempted to substantiate the veracity or integrity of such assumptions in relation the TBG Forecasts however, we have made sufficient enquiries to satisfy ourselves that such information has been prepared on a reasonable basis.

Notwithstanding the above, William Buck cannot provide any assurance that the TBG Forecasts will be representative of the results which will actually be achieved during the forecast period. Any variations in the TBG Forecasts may affect our valuation and opinion.

6.6 Disclosure of Information

In preparing this Report, William Buck has had access to all financial information considered necessary in order to provide the required opinion. Progen has requested that William Buck limit the disclosure of some commercially sensitive information, particularly in relation to the TBG Forecasts. This request was made on the basis of the commercially sensitive and confidential nature of the operational and financial information of TBG and its subsidiaries.

6.7 Current Market Conditions

Our opinion is based on economic, market and other conditions prevailing at the date of this Report. Such conditions can change significantly over relatively short periods of time. Accordingly, changes in those conditions may result in any valuation opinions becoming quickly outdated and in need of revision. We reserve the right to revise any valuation, or other opinion, in the light of material information existing at the valuation date that subsequently becomes known to us.

6.8 Assumptions

In forming our opinion, the following has been assumed:

- all relevant parties have complied, and will continue to comply, with all applicable laws and regulations and existing contracts and there are no alleged or actual material breaches of the same or disputes (including,

but not limited to, legal proceedings), other than as publicly disclosed and that there has been no formal or informal indication that any relevant party wishes to terminate or materially renegotiate any aspect of any existing contract, agreement or material understanding, other than as publicly disclosed;

- that matters relating to title and ownership of assets (both tangible and intangible) are in good standing, and will remain so, and that there are no material legal proceedings, or disputes, other than as publicly disclosed;
- information in relation to the Proposed Transaction provided to the Progen shareholders or any statutory authority by the parties is complete, accurate and fairly presented in all material respects;
- if the resolutions relating to the Proposed Transaction are approved, they will be implemented in accordance with its disclosed terms; and
- the legal mechanisms to implement the Proposed Transaction are correct and effective.

7. Profile of Progen

7.1 Overview

Progen is a biotechnology company, involved in the discovery, research, and development of pharmaceutical therapeutics for the treatment of human diseases in Australia and the United States. The company focuses on the development of an anti-angiogenesis and anti-metastatic oncology products pipeline.

Progen's products in research and development stage include PI-88, a heparanase inhibitor that is in Phase III clinical trial in post-resection liver cancer, and PG545, an anti-cancer compound in Phase I clinical trial. Progen also provides contract services related to the process development, manufacture, and quality assurance of biological products through PharmaSynth Pty Ltd, a wholly owned subsidiary.

Progen is an Australian publicly listed company trading on the Australian Securities Exchange ("**ASX**") (ASX:PGL) and also on the United States OTCQB Market (OTC:PGLA).

7.1.1 Products

Progen has two key research products, PI-88 and PG545, which are primarily focused on the treatment of liver cancers through inhibiting tumour growth via modulation of the tumour microenvironment.

Muparfostat (PI-88)

Muparfostat (PI-88) ("**PI-88**") is a sulphated mixture of sugars intended to inhibit the angiogenesis and metastasis growth mechanisms of solid tumours. PI-88 is a dual angiogenesis and heparanase inhibitor with an extensive patent family in all the key markets covering its composition of matter and use in oncology. There is currently no approved product for the area of oncology and cancer treatment being targeted by PI-88.

In June 2010, Progen signed a license and collaboration agreement with Medigen to complete product development and global commercialisation of PI-88 for use in oncology. Shortly after, Medigen commenced a Phase 3 clinical trial ("**PATRON**") in post-resection liver cancer with sites open in Taiwan, China and South Korea. PATRON is a randomised, placebo-controlled, multi-national trial. 500 subjects were successfully enrolled to participate in PATRON across the trial sites. Disease free survival[1] was employed as PATRON's primary measure of effectiveness as a therapeutic product.

In July 2014, Medigen announced interim analysis suggesting that PI-88 could not be proven to extend the lives of advanced liver cancer patients. The PATRON trial results did not warrant early conclusion of the trial and accelerated regulatory approval across Asia.

In January 2015, Medigen announced that it would execute a study conclusion plan for PATRON with clinical sites and investigators. After the collection of the clinical data, a comprehensive statistical analysis will be carried out and a final clinical study report prepared.

PG545

PG545 is a proprietary synthetic small molecule created to modulate five key processes in the tumour microenvironment.

[1] In cancer clinical trials, the length of time after primary treatment for a cancer ends that the patient survives without any signs or symptoms of that cancer. In a clinical trial, measuring the disease-free survival is one way to see how well a new treatment works.

In March 2013, Progen announced the execution of a license agreement with Medigen relating to the development and commercialisation of PG545 for liver cancer and non-oncology indications. Progen has retained the rights for all other oncology indications for PG545.

In October 2013, Progen initiated a Phase 1 trial for safety and tolerability using PG545 via an intravenous route of administration for patients with advanced cancer. This trial is ongoing. The primary objectives of the study are to:

- determine the maximum tolerated dose as defined by significant dose limiting toxicity, and
- measure the levels of PG545 in the blood of patients and other laboratory tests to learn more about the safety and potential efficacy of PG545.

During 2014, the PG545 Phase 1 clinical trial successfully completed three patient cohorts, increasing the intravenously administered dosage of PG545 from 25mg (Cohort 1) to 100mg (Cohort 3) without identifying a dose limiting toxicity. A fourth cohort of patients will receive 150mg doses of PG545 at weekly intervals.

7.1.2 Intellectual property

Progen's published portfolio of patents and patent applications licensed to or owned by Progen is summarised below.

Table 3 – Progen intellectual property portfolio

Patent Family	Family Name	Title	Expiry
1	Muparfostat (PI-88) and Related Compounds	Preparation and use of Sulfated Oligosaccharides	2016
2	PG545 and Related Compounds	Sulfated Oligosaccharide derivatives	2025
2	PG545 and Related Compounds	Novel Sulfated Oligosaccharide derivatives	2028

Source: Progen 2014 Annual Report

7.1.3 Services

PharmaSynth

PharmaSynth is a biopharmaceutical contract manufacturing organisation specialising in microbial cell culture products.

PharmaSynth's services include cyclic guanosine monophosphate ("**cGMP**") manufacture of recombinant proteins, vaccines and synthetic / semi-synthetic molecules for human and veterinary use.

PharmaSynth manufactures active pharmaceutical ingredients for pre-clinical studies through to Phase 3 clinical trials and commercial production and its services are particularly suited to the clinical trial requirements of biotechnology companies.

PharmaSynth's facilities are based in Darra, Queensland and the company's clients include Medigen, Prima BioMed Limited and Zensun USA, Inc.

7.2 Corporate Structure

Progen has three wholly owned subsidiaries, Progen Pharmaceuticals Inc, PharmaSynth Pty Ltd and Darra Investment Holdings Pty Ltd.

7.3 Capital Structure

As discussed in Section 1.2, Progen's capital structure comprises:

- 55,285,315 fully paid ordinary shares; and
- 2,019,200 options over fully paid ordinary shares.

The following table summarises Progen all options outstanding as at 30 June 2015.

Table 4 – Progen options as at 30 June 2015

Tranche	Grant date	Expiry date	Exercise price	Balance as at 30 June 2015	Vested as at 30 June 2015
1	Jan-11	Jan-16	$ 0.29	90,000	90,000
2	Mar-13	Mar-16	$ 0.30	1,000,000	1,000,000
3	Aug-13	Sep-18	$ 0.21	30,000	30,000
4	Apr-14	Apr-18	$ 1.20	142,800	142,800
5	Apr-14	Jan-18	$ 1.30	259,600	259,600
6	Apr-14	Oct-18	$ 1.50	226,800	-
7	Nov-14	Dec-18	$ 1.20	120,000	120,000
8	Nov-14	Jun-18	$ 1.30	120,000	120,000
9	Nov-14	Dec-18	$ 1.50	-	-
10	Nov-14	Apr-18	$ 1.20	6,000	6,000
11	Nov-14	Jan-18	$ 1.30	12,000	12,000
12	Nov-14	Oct-18	$ 1.50	12,000	-
Total				**2,019,200**	**1,780,400**

Source: Progen 30 June 2015 Preliminary Final Report

We understand that there has been no material change in the above details to the date of this Report.

7.4 Financial Position

7.4.1 Going concern

Progen is audited by BDO Audit Pty Ltd ("**BDO**"). BDO's audit opinion in the Progen Preliminary Final Report for the year ended 30 June 2015 included an emphasis of matter, noting the existence of a material uncertainty regarding Progen's ability to continue as a going concern. BDO's audit opinion notes that Progen incurred a net loss of $4.7 million for the year ended 30 June 2015 ("**FY15**") and needs to raise additional funds to continue as a going concern.

Progen's 30 June 2015 Preliminary Final Report notes that:

- Progen's current cash reserves and inflows are insufficient to continue to fund operations and based on current and projected expenditure levels Management contemplates a capital raising may be required to continue to fund operations;
- The ability of the consolidated entity to continue as a going concern is principally dependent upon:
  - the ability of the company to raise additional capital funding in the form of equity and/or government sponsored research;

- the continued support of the current shareholders;
- the ability to successfully develop and extract value from its projects that are under development; or
- the ability to spin-off or cease operations in non-core areas.

Progen's directors believed that the going concern basis of preparation was appropriate due to:

- an expectation that Progen will be able to fund its future activities through further issuances of equity securities; and
- there being sufficient cash available for the consolidated entity to continue operating until it can raise sufficient further capital to fund its ongoing activities.

7.4.2 Financial position overview

Progen's audited consolidated statements of financial position as at 30 June 2013, 30 June 2014 and 30 June 2015 are set out below.

Further information and analysis regarding significant account balances is set out in the sections that follow.

Table 5 – Progen statements of financial position

$000	As at 30 June 2013 (Audited)	As at 30 June 2014 (Audited)	As at 30 June 2015 (Audited)
Cash and cash equivalents	1,448	2,981	2,813
Held to maturity investments	7,115	2,615	-
Trade and other receivables	1,578	3,148	1,370
Prepayments and other assets	145	335	406
Total current assets	**10,286**	**9,079**	**4,589**
Other assets	13	24	24
Prepayments	61	26	-
Plant and equipment	195	539	443
Total non-current assets	**269**	**589**	**467**
Total assets	**10,555**	**9,668**	**5,056**
Trade and other payables	426	1,029	913
Provisions	243	576	639
Total current liabilities	**669**	**1,605**	**1,552**
Provisions	163	49	42
Total non-current liabilities	**163**	**49**	**42**
Total liabilities	**832**	**1,654**	**1,594**
Net assets	**9,723**	**8,014**	**3,462**
Contributed equity	158,321	158,321	158,321
Reserves	3,598	3,696	3,828
Accumulated losses	(152,196)	(154,003)	(158,687)
Total equity	**9,723**	**8,014**	**3,462**

Source: Progen 30 June 2014 Annual Report and 30 June 2015 Preliminary Final Report

We note the following regarding Progen's historical statements of financial position:

- Progen's assets primarily relate to cash, held to maturity investments and trade and other receivables.
- Progen's balance of cash and held to maturity investments deteriorated from $8.6 million as at 30 June 2013 to $2.8 million as at 30 June 2015 due to investment in research and development activities and mixed performance of PharmaSynth, Progen's only revenue generating business unit. PharmaSynth achieved a segment loss of $697k in FY13, a segment profit of $715 in FY14 and a segment loss of $1.8 million in FY15.
- Trade and other receivables relate primarily to PharmaSynth trade receivables and accrued sales not yet billed.
- Progen's liabilities primarily relate to trade and other payables and provisions.
- Trade and other payables primarily relate to the PharmaSynth business.
- Provisions as at 30 June 2015 include a make good provision of $275k in accordance with the lease agreement terms for the Company's premises at Darra. The balance of provisions relate to provisions for employee leave entitlements.
- Reserves primarily relate to an employee reserve which is used to record the value of share based payments provided to employees, including key management personnel, as part of their remuneration.

7.4.3 Historical capital raisings

Progen raised equity capital twice during FY13: via a rights entitlement offer concluded 22 May 2013 ("**Rights Issue**") and via a private placement concluded 27 May 2013 ("**Placement**").

The Rights Issue was announced on 16 April 2013 and shares allotted from the offer were issued on 22 May 2013. Non-renounceable rights under the Rights Issue had an exercise price of $0.21. The Rights Issue resulted in Progen raising $5.2 million, before costs of the offer, through the issue of 24,709,097 new shares.

The Placement was announced on 27 May 2013 and shares allotted were issued on 29 May 2013. Progen raised $1.2 million, before costs of the offer, at $0.21 per share through the issue of 5,867,121 shares.

7.4.4 Carry forward tax losses

As at 30 June 2015, Progen reported net deferred tax assets not recognised in the accounts of $51.1 million.

In Australia, Progen had tax losses of $154,936,141 as at 30 June 2015 that are available indefinitely for offset against future taxable profits of the companies in which the losses arose, subject to satisfying the relevant income tax loss carry forward rules.

In the US, Progen Pharmaceuticals Inc. had US federal and state net operating loss carry-forwards of approximately US$8,296,000 and US$63,000, respectively, as at 30 June 2015 which have a carry forward period between 2028 – 2029 and are available for a maximum of 20 years, subject to a continuity of ownership test.

7.5 Financial Performance

Details of Progen's consolidated historical results for the years ended 30 June 2013 ("**FY13**"), 30 June 2014 ("**FY14**") and 30 June 2015 ("**FY15**") are set out below.

Table 6 – Progen consolidated statements of financial performance

$000	FY13 (Audited)	FY14 (Audited)	FY15 (Audited)
Manufacturing services revenue	2,816	5,411	3,341
License fee revenue	500	120	-
Interest revenue	194	223	102
Total revenue	**3,510**	**5,754**	**3,443**
Cost of sales	(2,273)	(2,592)	(2,266)
Gross profit	**1,237**	**3,162**	**1,177**
Research and development tax refund	723	614	854
Other income	136	81	72
Research and development expenses	(940)	(1,395)	(1,777)
Manufacturing facility expenses	(1,240)	(2,104)	(2,835)
Administrative and corporate expenses	(1,755)	(2,141)	(2,173)
Other overheads	(253)	(24)	(2)
Loss before tax	**(2,092)**	**(1,807)**	**(4,684)**
Foreign currency translation	-	-	-
Total comprehensive loss for the year	**(2,092)**	**(1,807)**	**(4,684)**

Source: Progen 2014 Annual Report and 30 June 2015 Preliminary Final Report

Progen reported significant losses in each of the last three financial years despite achieving reasonable levels of revenue.

Over the last three financial years, Progen has generated the majority of its revenue through the PharmaSynth business and has also received smaller amounts of license fee revenue through the PI-88 licensing agreement with Medigen.

Progen's cost of sales and manufacturing facility expenses relate entirely to PharmaSynth. Progen's segment results are discussed further below.

7.5.1 Operating segment results

Analysis of Progen's segment results is set out in the table below.

Table 7 – Progen operating segment results

$000	FY13 (Audited)			FY14 (Audited)			FY15 (Audited)		
	R&D	Pharma-Synth	Total	R&D	Pharma-Synth	Total	R&D	Pharma-Synth	Total
Sales to external customers	-	2,816	2,816	-	5,412	5,412	-	3,341	3,341
License fee income	-	-	500	-	-	120	-	-	-
Interest income	-	-	194	-	-	102	-	-	102
Segment result	**(217)**	**(697)**	**(913)**	**(781)**	**715**	**(66)**	**(922)**	**(1,761)**	**(2,683)**
Unallocated other income	-	-	-	-	-	424	-	-	424
Corporate and admin costs	-	-	(885)	-	-	(1,902)	-	-	(2,011)
Other expenses	-	-	(294)	-	-	(264)	-	-	(413)
Operating loss	**-**	**-**	**(2,092)**	**-**	**-**	**(1,808)**	**-**	**-**	**(4,683)**

Source: Progen 2014 Annual Report and 30 June 2015 Preliminary Final Report

From Progen's operating segment results, it is key to note that despite achieving revenues of $2.8 million, $5.4 million and $3.3 million is FY13, FY14 and FY15, respectively, the PharmaSynth business generated an operating profit in FY14 only. PharmaSynth's $1.8 million loss in FY15 primarily reflects a ramping up of operations in order to support the PI-88 clinical trials. As a result of PI-88's disappointing Phase 3 clinical trial results and subsequent changes to the PATRON programme, PharmaSynth was left with under-utilised staff and facilities.

7.6 Statement of cash flows

Details of Progen's consolidated cash flows for FY13, FY14 and FY15 are set out below.

Table 8 – Progen statement of cash flows

$000	FY13 (Audited)	FY14 (Audited)	FY15 (Audited)
Net loss	**(2,092)**	**(1,807)**	**(4,684)**
Depreciation	139	270	397
Share options expensed	(7)	99	132
Loss on disposal of plant and equipment	5	-	-
Changes in working capital:			
(Increase)/Decrease in trade and other receivables	259	(1,570)	1,778
Increase in prepayments and other assets	6	(166)	(45)
Increase/(Decrease) in trade and other payables	(930)	603	(116)
Increase in provisions	59	73	56
Net Operating Cash Flows	**(2,561)**	**(2,498)**	**(2,482)**
Redemption/(Purchase) of short term investments	(3,926)	4,500	2,615
Purchase of plant and equipment	(49)	(468)	(302)
Proceeds from sale of plant and equipment	-	-	1
Net Investing Cash Flows	**(3,975)**	**4,032**	**2,314**
Proceeds from rights issues	5,189	-	-
Proceeds from share placement	1,232	-	-
Transaction costs from shares issuance	(272)	-	-
Net Financing Cash Flows	**6,149**	**-**	**-**
Net Cash Flows	**(387)**	**1,534**	**(168)**

Source: Progen 2014 Annual Report and 30 June 2015 Preliminary Final Report

As discussed above, Progen reported losses in each of the last three financial years. These losses have translated to net operating cash outflows of approximately $2.5 million in each year.

Operating losses and investment in plant and equipment during the Review Period of $0.8 million have been primarily funded by the FY13 proceeds of the Rights Offer and the Placement.

Progen reported net cash outflows in FY13 and FY15. Positive net cash flows in FY14 of $1.5 million resulted from moving $4.5 million from short term investments into Progen's cash balance.

Progen's closing cash balance at 30 June 2015 was $2.8 million and short-term held to maturity investments had been reduced to $nil.

As discussed in Section 7.4.1, Progen's current cash reserves and inflows are insufficient to continue to fund operations and based on current and projected expenditure levels Management contemplates a capital raising may be required to continue to fund operations.

7.7 Share price performance and liquidity analysis

We reviewed Progen's share price performance for the 12 months immediately prior to its 1 May 2015 announcement regarding the TBG Acquisition. For the 12 months ended 30 April 2015 ("**Historical Trading Period**") we have reviewed Progen's:

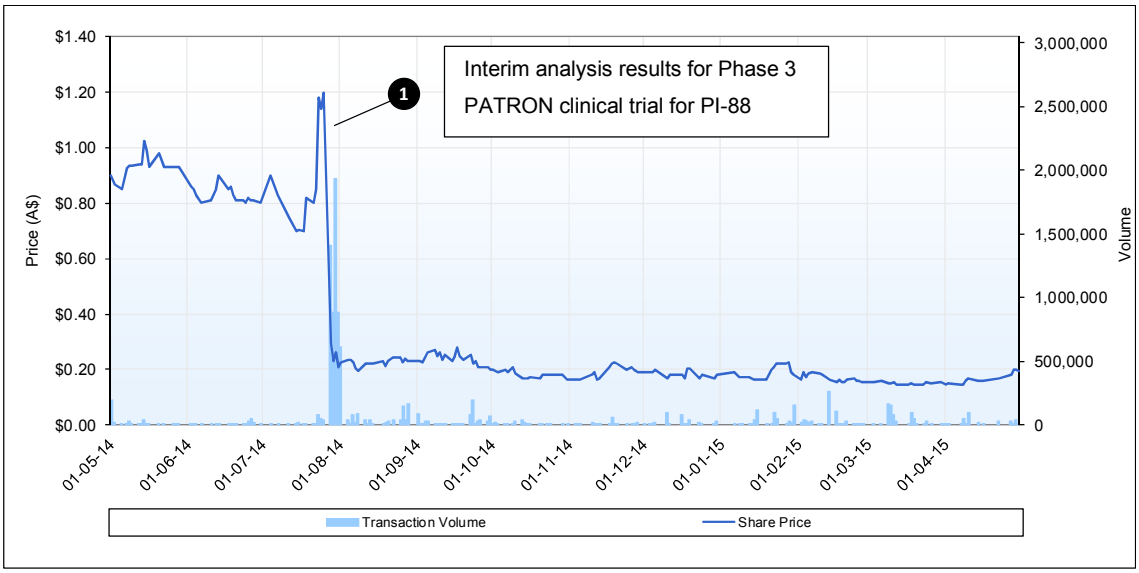
- daily share price;
- daily trading volumes; and
- volume weighted average share price ("**VWAP**").

In addition to our review of Progen's historical share price and VWAP history, we have also reviewed the level of trading liquidity in Progen's shares during the Historical Trading Period in order to assess whether the level of liquidity is sufficient to support a fair assessment of the market value of Progen's shares based on its quoted market price.

7.7.1 Share price and trading volume history

The figure below sets out the ASX daily share price and trading volumes of Progen shares during the Historical Trading Period.

Figure 2 – Progen daily volume and share price history



Source: S&P Capital IQ, William Buck analysis and Progen ASX announcements

7.7.2 Key announcements during the Historical Trading Period

Progen made 13 price sensitive ASX announcements during the Historical Trading Period. However, one key ASX announcement had the most pronounced effect on it's share price.

On 28 July 2014, as marked by "**1**" in the figure above, Progen announced the results of interim analysis for the Phase III PATRON clinical trial for PI-88. The results indicated that PI-88 did not meet the primary endpoint of Disease Free Survival, based on recurrent data from each individual clinical trial centre. Following the 28 July 2014 announcement, Progen's share price fell from a closing price on 25 July 2014 of $1.20 to a closing price of $0.23 on 1 August 2014.

A summary of Progen's remaining price sensitive ASX announcements during the Historical Trading Period are set out in the following table.

Table 9 – Progen price sensitive ASX announcements

Date	Announcement
08-May-2014	Medigen Expects PI-88 Interim Patient Data in May 2014
14-May-2014	Changes to Management & Corporate Office Address
15-May-2014	PG545 Phase 1Clinical Trial Update
21-Jul-2014	EPO to Grant Sulfated Oligosaccharide Derivatives Patent
28-Jul-2014	Interim Phase III Results for PI-88
29-Jul-2014	Update to Interim Phase III Results for PI-88
26-Aug-2014	Preliminary Final Report
22-Sep-2014	PG545 Phase 1Clinical Trial Update
14-Nov-2014	Notice of Allowance of Canada Patent for PG545
19-Dec-2014	PG545 Phase 1Trial Successfully Completes Third Cohort
28-Jan-2015	PI-88 Clinical Trial Update
17-Feb-2015	Receipt of R&D Tax Incentive Refund
27-Feb-2015	Half Yearly Report & Accounts

Source: www.asx.com.au

Further details in relation to all announcements made by Progen to the ASX can be obtained from either Progen's website (www.progen-pharma.com) or the ASX's website (www.asx.com.au).

7.7.3 VWAP and liquidity analysis

The table below summaries the VWAP and liquidity of Progen over the 12 months ended 30 April 2015.

Table 10 – Progen share trading

Period	Volume Traded	Value ($)	VWAP ($)	Average # Shares on Issue	Turnover
1 day	2,000	390	0.195	55,285,320	0.0%
1 month	980,320	152,910	0.156	55,285,320	1.8%
3 months	1,607,500	257,596	0.160	55,285,320	2.9%
6 months	2,650,880	453,908	0.171	55,285,320	4.8%
12 months	10,869,710	3,008,584	0.277	55,285,320	19.7%
29 July 2014 - 30 April 2015	8,686,770	1,865,632	0.215	55,285,320	15.71%

Source: S&P Capital IQ and William Buck analysis

We note the following with respect to trading in Progen over the Historical Trading Period:

- Progen's share price ranged from a low of $0.15 to a high of $1.20, however during the period from 29 July 2014 to 30 April 2015, Progen's share price ranged from a low of $0.15 to a high of $0.28;
- Progen shares exhibited a low level of liquidity with the total number of shares traded during the Historical Trading Period comprised approximately 19.7% of total Progen shares on issue;
- Liquidity in Progen's shares was very high in the week of the 28 July 2014 PI-88 announcement. In the week commencing Monday, 28 July 2014, 5,739,880 Progen shares were traded which equates to turnover of 540% on an annualised basis;
- Progen's VWAP for the Historical Trading Period was $0.277. Progen's VWAP for the period from 29 July 2015 to 30 April 2015 was $0.215.

In general, Progen's shares demonstrated low liquidity over the Historical Trading Period. Ordinarily, we would conclude that the level of liquidity was not sufficient to support an assessment of the fair market value of Progen's shares based on its quoted market price.

However, as discussed above, in the week following Progen's announcement regarding clinical trial results for PI-88, trading in Progen shares demonstrated a high level of liquidity. During this period, Progen's share price fell from $1.20 to a range of $0.21 to $0.23 and has remained at that level (VWAP for the period from 29 July 2014 to 30 April 2015 of $0.215) since.

8. Profile of TBG

8.1 Overview

TBG Inc. ("**TBG**") is a global molecular diagnostics business focused on the development, manufacture and marketing of nucleic acid testing ("**NAT**") kits, services and instruments. TBG was founded by Medigen in 2006 and is incorporated in the Cayman Islands. TBG has three wholly owned subsidiaries: Texas BioGene, Inc. ("**Texas BioGene**"), TBG Biotechnology Corp. ("**TBG Taiwan**")and TBG Biotechnology Xiamen INC ("**TBG Xiamen**") which are based in the US, Taiwan and China, respectively.

An overview of the global in Vitro Diagnostics[2] ("**IVD**") industry, of which molecular diagnostics is a part, is set out in Appendix C.

By way of background:

- Medigen entered the molecular diagnostics business through TBG at the start of 2006 with the acquisition of Texas BioGene and proceeded to develop a Texas BioGene low resolution human leukocyte antigen ("**HLA**") sequence-specific primer ("**SSP**") typing kit[3] prototype and obtain regulatory approvals for the product. TBG began selling the HLA SSP kit during 2007 and 2008. Around the same time TBG began to develop a high resolution HLA typing product based on sequence based typing ("**SBT**"). The HLA SBT product entered the market in 2011.
- In 2007, TBG also entered the NAT blood screening business through the acquisition of Shanghai Haoyuan Biotech Co., Ltd ("**Haoyuan**"), a Chinese company. For the NAT blood screening business, TBG developed ChiTas 1200, a state of the art automated blood screening workstation, which gained Chinese State Food And Drug Administration ("**SFDA**") approval in 2010. Haoyuan subsequently achieved significant blood screening market share in China and in November 2012, was acquired by PerkinElmer Inc. ("**PerkinElmer**") for US$38 million. TBG's cash balance as at 30 June 2015 (refer Section 8.4) includes residual funds from the sale of Haoyuan.
- As a condition of the sale of Haoyuan, TBG has been prevented from researching, developing or selling hepatitis related diagnostics products other than in Taiwan until the end of 2016. However, TBG has been active in the development of Hepatitis B virus ("**HBV**") and Hepatitis C virus ("**HCV**") viral load assays[4], which will be used for new product development, as well as the next generation of blood screening products and proprietary automated workstations targeting blood services both in Taiwan and in China.

TBG incorporated TBG Xiamen in 2014 and acquired a 6,500m^2 manufacturing facility in Xiamen, China. Construction of the Xiamen facility was completed in the first quarter of 2015 and ISO 13485[5] certification is underway and expected to be completed by the end of October 2015. Through the Xiamen facility, TBG will insource product manufacture currently being performed by contract manufacturers in Taiwan. The Xiamen facility will also support product research and development activities across the full spectrum of molecular diagnostics, microbiology, virology, genetics, oncology, sexually transmitted diseases and blood screening.

On 1 January 2015, Medigen's HLA business, including all employees, assets and intellectual property was transferred into TBG Taiwan.

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[2] A diagnostic test of a sample of tissue or bodily fluids performed in an artificial environment, usually a laboratory.

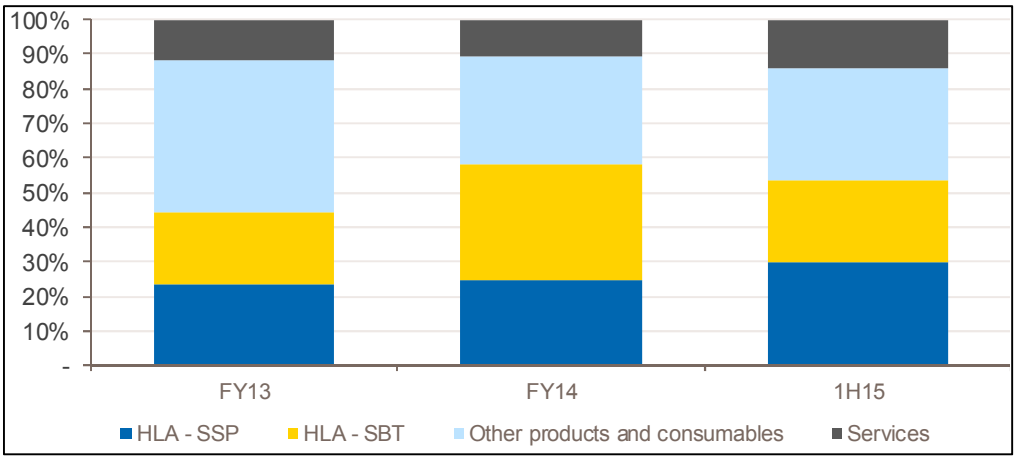
[3] HLA typing kits are used for the purpose of determining HLA phenotype. The HLA system are the genes that encode proteins on the surface of cells and are responsible for regulation of the human immune system. HLA typing is critical for organ transplants and diagnosis of certain diseases.

[4] Viral load assays measure genetic material called RNA from virus particles in blood plasma.

[5] ISO 13485 relates to quality management systems for the design and manufacture of medical devices.

TBG currently derives its revenues from conventional HLA SSP and SBT typing services, product sales such as sale of automated pipetting systems, NAT extracting systems and automated blood screening system (ChiTaS) consumables. The proportional contributions of revenue by source over the last 2.5 years are shown below.

Figure 3 – TBG revenue mix



Source: Information provided by TBG

8.1.1 New product development

TBG plans to expand its footprint in the Chinese market, introducing its current products and developing new products suited for the growing Chinese market. The main areas of development are as follows:

— *HLA products and services*

As discussed above, TBG's current HLA product portfolio focuses around HLA SSP and SBT typing kits and services. TBG is currently in various stages of development and clinical testing for a number of new products to expand its offering in HLA typing kits and reagents, including real-time polymerase chain reaction ("**PCR**") HLA SSP typing, an advanced laboratory technique compared with conventional HLA SSP typing.

— *Virology - infectious diseases*

TBG already manufactures a range of virology products and endeavours to continue building its market share in this sector. Global demand for virology diagnostic products is high and the Chinese market presents significant opportunities. TBG is in various stages of development for products targeted at lower respiratory tract diseases, sexually transmitted diseases, hand, foot and mouth disease and pneumonia.

— *Oncology*

Cancer is the leading cause of death in China, with China's cancer patients accounting for 22% of new cancer cases and 27% of the world's cancer death, according to information released by Beijing's Cancer Prevention and Control Research Office in 2012. Rising air pollution levels and smoking habits are said to be the main contributing factors to the high rate (21.7% of cancers diagnosed in China) of lung cancer in China. This is followed by stomach and liver cancer (19.5% and 18.1% respectively). The rate of cancer related deaths are expected to continue to rise, with no obvious national screening program or national educational campaigns to educate the public. In line with this, TBG is in the process of developing products for the testing of targeted cancer therapy for non-small cell lung cancer ("NSCLC"), colorectal, and melanoma.

In line with the Government's push for cervical and breast cancer screening for females, TBG will also develop a range of products in this area.

— *Equipment*

In addition to products across the range of molecular diagnostics, TBG is in the process of developing a new automated products in its range, including a new generation of ChiTaS, clinical automation product and a real-time PCR analysis machine.

Current IVD molecular diagnostics systems involve a level of manual handling which can result in contamination of the sample and reduce the accuracy of the results. There is a demand in the industry to automate processes to reduce manual handling, increasing quality of results, increase capacity and increase sensitivity of the systems.

8.1.2 Intellectual property

TBG holds or had access to the following patents to protect the manufacture and commercialisation of its technology.

Table 11 – TBG intellectual property

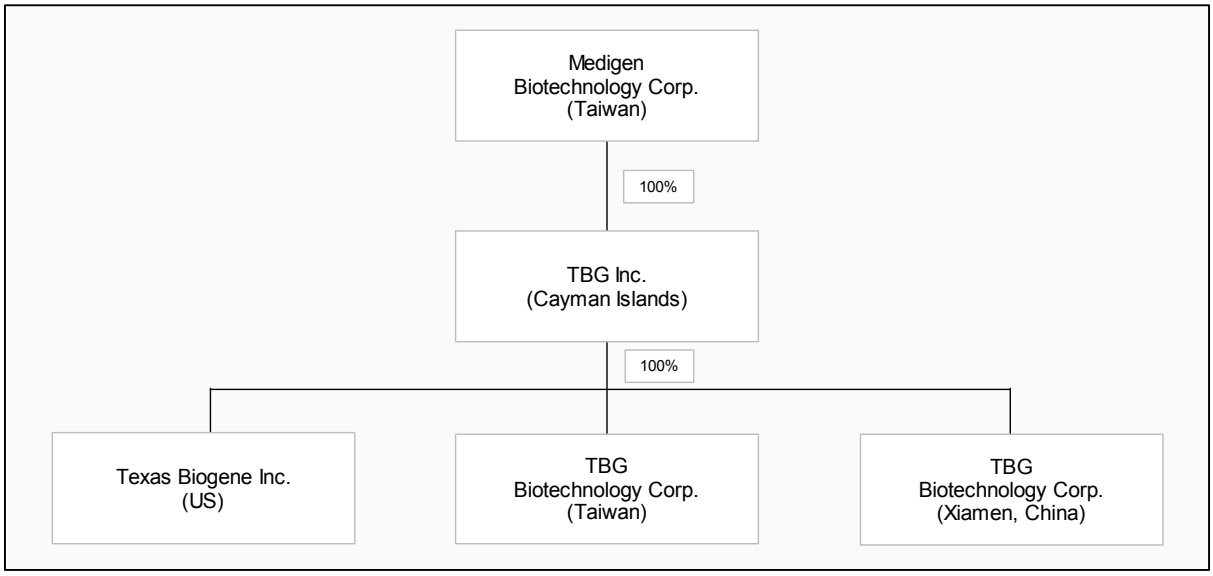
Patent number	Country	Patent name	Expiry
CN104102855A	China	Sequencing-based typing (SBT) system and method for Human Leukocyte Antigen locus	Patent pending
M409885	Taiwan	Specimen carrier for blood test device	February 2021

Source: Information provided by TBG

8.2 Corporate Structure

TBG is wholly owned subsidiary of Medigen and has three wholly owned subsidiaries, as set out in the following figure.

Figure 4 – TBG corporate structure



Source: Information provided by TBG

TBG Taiwan established an American Society Histocompatibility and Immunogenetics certified laboratory for the manufacture of HLA typing reagent in 2005. This laboratory provides typing test services to hospitals and cord blood banks in Taiwan and research and development for new products. The key operations of TBG Taiwan are product development, product manufacture, certification applications and HLA typing testing. TBG Taiwan's facilities are ISO13485 certified.

The main operations of TBG Xiamen will be the production of NAT reagent, testing, research and development, Chinese medical device approval applications and China sales and marketing. Pending certification and accreditation, TBG Xiamen is expected to manufacture TBG's real-time PCR machines. Componentry for these machines is expected to be sourced from Taiwan. As previously mentioned, ISO13485 certification for TBG Xiamen's facilities is currently underway.

Texas BioGene focuses on research and development and US Food and Drug Administration certifications.

8.3 Capital Structure

As at 30 June 2015, TBG's issued capital was NT$308,062,292 (A$13 million) consisting of 101,722,974 ordinary shares with a par value of US$0.10 per share.

8.4 Financial Position

TBG's audited financial position as at 31 December 2013 and 31 December 2014 and un-audited financial position as at 30 June 2015 is set out below.

As discussed above, while TBG has existed since 2006, up until 1 January 2015, TBG's molecular diagnostics business was primarily operated as a division of Medigen. On 1 January 2015, the molecular diagnostics business, employees and assets were transferred into TBG Taiwan.

The consolidated financial statements of TBG on a standalone basis for the years ended 31 December 2013 and 31 December 2014 have been audited by PricewaterhouseCoopers Taiwan, which has expressed a clean audit opinion. TBG's financial statements for the six months ended 30 June 2015 are based on internal management accounts and have not been audited.

Table 12: TBG consolidated financial position

	NT$000			A$000		
	As at 31 December 2013	As at 31 December 2014	As at 30 June 2015	As at 31 December 2013	As at 31 December 2014	As at 30 June 2015
	Audited	Audited	Un-audited	Illustrative [1]	Illustrative [2]	Illustrative [3]
Cash and cash equivalents	314,541	210,845	155,053	11,788	8,153	6,518
Trade and other receivables	57,464	6,011	10,178	2,154	232	428
Inventory	-	-	10,409	-	-	438
Prepayments	1,226	64,890	8,481	46	2,509	357
Total current assets	**373,231**	**281,746**	**184,121**	**13,988**	**10,894**	**7,740**
Available for sale financial assets	44,530	31,241	-	1,669	1,208	-
Property, plant and equipment	-	41,112	46,940	-	1,590	1,973
Intangible assets	16,537	16,537	16,922	620	639	711
Other non-current assets	316	2,460	35,161	12	95	1,478
Total non-current assets	**61,383**	**91,350**	**99,023**	**2,301**	**3,532**	**4,163**
Total assets	**434,614**	**373,096**	**283,144**	**16,288**	**14,427**	**11,903**
Trade and other payables	7	852	9,683	0	33	407
Current income tax liabilities	49,969	-	-	1,873	-	-
Other current liabilities	445	476	899	17	18	38
Total current liabilities	**50,421**	**1,328**	**10,582**	**1,890**	**51**	**445**
Other non-current liabilities	702	-	-	26	-	-
Total non-current liabilities	**702**	**-**	**-**	**26**	**-**	**-**
Total liabilities	**51,123**	**1,328**	**10,582**	**1,916**	**51**	**445**
Net assets	**383,491**	**371,768**	**272,562**	**14,372**	**14,375**	**11,458**
Share capital	371,199	371,199	308,062	13,912	14,353	12,951
Retained earnings	9,738	2,226	(36,550)	365	86	(1,537)
Other equity interest	2,554	(1,657)	1,050	96	(64)	44
Total equity	**383,491**	**371,768**	**272,562**	**14,372**	**14,375**	**11,458**

Source: Audited financial statements for 31 December 2013 and 2014 and management accounts for 30 June 2015

Notes:

1 *For illustrative purposes, translated to Australian Dollars at the 31 December 2013 spot rate of NTD:AUD 0.0375*

2 *For illustrative purposes, translated to Australian Dollars at the 31 December 2014 spot rate of NTD:AUD 0.0387*

3 *For illustrative purposes, translated to Australian Dollars at the 30 June 2015 spot rate of NTD:AUD 0.0420*

We note the following regarding the historical financial position of TBG:

- TBG reported net assets as at 30 June 2015 of approximately A$11.5 million, down from approximately A$14.4 million as at 31 December 2013 and 31 December 2014. The reduction in net assets relates primarily to approximately A$2.7 million share capital returned to Medigen during the six months ended 30 June 2015. This return of capital is discussed further below.
- TBG reported a cash balance of approximately A$6.5 million as at 30 June 2015. These funds are the residual from the sale of Haoyuan to PerkinElmer Inc., net of amounts distributed to Medigen, investment in TBG working capital, investment in TBG Xiamen facilities and plant and equipment, and ongoing operating expenses. TBG's current cash resources will be used to partly fund its development strategy.
- Available for sale financial investments, which have a $nil balance as at 30 June 2015, related to Progen shares held by historically by TBG. As part of the process of separate TBG from Medigen from the start of 2015, TBG sold its Progen shares to Medigen in February 2015, resulting in a loss on disposal of NT$4.4 million (A$0.2 million).
- Property, plant and equipment as at 31 December 2014 and 30 June 2015 relates almost entirely to leasehold improvements and machinery and equipment at TBG's new Xiamen facility. TBG Taiwan possesses a number of fully operational laboratories containing valuable plant and equipment however, the written down value of these assets was $nil as at 30 June 2015.
- Intangible assets represent goodwill on the 2006 acquisition of Texas BioGene.
- Other non-current assets as at 30 June 2015 relate to deferred costs for the Xiamen facility fit-out and will be amortised over 10 years following completion of the fit-out.
- TBG's share capital decreased by NT$63.1 million (A$2.7 million) between 31 December 2014 and 30 June 2015. TBG had transferred cash in that amount to Medigen during 2014 this transfer was recorded as a prepayment in TBG's balance sheet as at 31 December 2014. In first quarter 2015, TBG resolved to the prepayment as a return of capital and the prepayment balance was offset against share capital.

8.5 Financial Performance

8.5.1 Audited historical statements of financial performance

TBG's audited statements of financial performance for the years ended 31 December 2013 and 31 December 2014 are set out below.

As discussed above, TBG's audited statements of financial performance do not fully reflect its molecular diagnostics business which was transferred from Medigen on 1 January 2015.

Table 13: TBG audited consolidated statements of financial performance

	NT$000		A$000	
	Year ended 31 December 2013	Year ended 31 December 2014	Year ended 31 December 2013	Year ended 31 December 2014
	Audited	Audited	Illustrative [1]	Illustrative [2]
Selling expenses	-	(100)	-	(4)
General and administrative expenses	(9,657)	(17,799)	(337)	(651)
Research and development expenses	-	(245)	-	(9)
Operating loss	**(9,657)**	**(18,144)**	**(337)**	**(664)**
Other income	1,695	4,855	59	178
Other gains/(losses)	10,538	5,778	368	211
Income/(Loss) before income tax	**2,576**	**(7,511)**	**90**	**(275)**
Income tax expense	-	-	-	-
Net income/(loss) for the year	**2,576**	**(7,511)**	**90**	**(275)**
Foreign currency translation gain/(loss)	53	2,850	2	104
Unrealised gain/(loss) on valuation of available for sale financial assets	2,652	(7,061)	93	(258)
Total comprehensive gain/(loss)	**5,281**	**(11,722)**	**184**	**(429)**

Source: Audited financial statements for 31 December 2013 and 2014

Notes:

1 *For illustrative purposes, translated to Australian Dollars at the average 2013 exchange rate of NTD:AUD 0.0349*

2 *For illustrative purposes, translated to Australian Dollars at the average 2014 exchange rate of NTD:AUD 0.0366*

We note the following regarding TBG's audited historical statements of financial performance:

- General and administrative expenses reported by TBG in 2013 and 2014 relate primarily to employment costs, consulting fees and TBG Xiamen operating expenses. Standalone management accounts of TBG are set out in Section 8.5.2 below. Audited general and administrative costs are included in total operating expenses per the management accounts.
- 2013 Other income relates to bank interest. 2014 other income relates to bank interest and a NT$4.5 million (A$0.2 million) gain on disposal of shares in Haoyuan, following finalisation of completion adjustments included in the Haoyuan sale and purchase agreement.
- 2013 other gains relate to net foreign currency gains. 2014 other gains includes an NT$12.0 million (A$0.4 million) net currency exchange gain, partially offset by an impairment loss in relation to TBG's investment in Progen of NT$6.2 million (A$0.2 million).
- 2014 foreign currency translation gains relate to USD appreciation in 2014.
- The 2013 unrealised gain on valuation of available for sale financial assets relates to TBG's investment in Progen. The 2014 unrealised loss on valuation of available for sale financial assets also relates to TBG's investment in Progen.

8.5.2 TBG standalone management accounts

As set out below, TBG Management has provided us with Medigen's un-audited management accounts for its molecular diagnostics business for the years ended 31 December 2013 and 31 December 2014. We have also been provided with TBG's un-audited management accounts for the six months ended 30 June 2015.

This financial information is illustrative of the historical financial performance of TBG's molecular diagnostics business.

Table 14 – Standalone Management profit and loss

	NT$000			A$000		
	Year ended 31 December 2013	Year ended 31 December 2014	Period to 30 June 2015	Year ended 31 December 2013	Year ended 31 December 2014	Period to 30 June 2015
	Un-audited	Un-audited	Un-audited	Illustrative [1]	Illustrative [2]	Illustrative [3]
Sales	72,408	68,323	20,004	2,527	2,501	820
Cost of sales	(32,677)	(22,155)	(6,655)	(1,140)	(811)	(273)
Gross profit	**39,731**	**46,168**	**13,349**	**1,387**	**1,690**	**547**
Gross profit margin	54.9%	67.6%	66.7%	54.9%	67.6%	66.7%
Total operating expenses	(51,547)	(67,486)	(47,630)	(1,799)	(2,470)	(1,953)
Non-operating gain/(loss)	-	-	(7,087)	-	-	(291)
Net income before tax	**(11,816)**	**(21,318)**	**(41,368)**	**(412)**	**(780)**	**(1,406)**

Source: Medigen management accounts and TBG management accounts

Notes:

1 *For illustrative purposes, translated to Australian Dollars at the average 2013 exchange rate of NTD:AUD 0.0349*

2 *For illustrative purposes, translated to Australian Dollars at the average 2014 exchange rate of NTD:AUD 0.0366*

3 *For illustrative purposes, translated to Australian Dollars at the average 1H15 exchange rate of NTD:AUD 0.0410*

We note the following regarding TBG's historical management accounts:

- Historical revenue and gross profit are discussed in greater detail below. At a high level, TBG's gross profit improved between 2013 and 2014, despite a decline in revenue. In 2014, TBG experienced a significant decline in lower margin sales of ChiTas consumables but achieved an increase in higher margin HLA SSP and SBT typing kits.
- 1H15 sales appear low in comparison with prior years however, TBG Management is confident that 2015 sales and gross profit will be in line with the prior year.
- Operating expenses increased significantly in 1H15 in comparison with the prior years. This is due to beginning to execute its strategic plan from the start of 2015, including additional headcount in Taiwan, and ramping up of operations and headcount in Xiamen ahead of planned production commencement at the facility from the start of 2016.
- TBG's 1H15 non-operating loss includes an NT$4.4 million (A$0.2 million) loss on disposal of Progen shares and a currency exchange loss of NT$2.4 million (A$0.1 million).

8.5.3 TBG revenue and gross profit

The following table sets out analysis of historical TBG revenue and gross profit by product / service. Information prior to 1 January 2015 has been extracted from Medigen's management accounts. Information for 1H15 reflects TBG's management accounts.

Table 15 – TBG historical revenue and gross profit by product / service

	NT$000			A$000		
	Year ended 31 December 2013	Year ended 31 December 2014	Period to 30 June 2015	Year ended 31 December 2013	Year ended 31 December 2014	Period to 30 June 2015
	Un-audited	Un-audited	Un-audited	Illustrative [1]	Illustrative [2]	Illustrative [3]
HLA - SSP	17,109	16,952	5,977	597	620	245
HLA - SBT	15,156	22,971	4,688	529	841	192
Other products and consumables	31,846	21,169	6,483	1,111	775	266
Services	8,297	7,231	2,856	290	265	117
Total sales	**72,408**	**68,323**	**20,004**	**2,527**	**2,501**	**820**
HLA - SSP	13,594	13,501	5,038	474	494	207
HLA - SBT	13,931	19,930	4,210	486	729	173
Other products and consumables	8,935	10,066	3,807	312	368	156
Services	3,271	2,671	294	114	98	12
Total gross profit	**39,731**	**46,168**	**13,349**	**1,387**	**1,690**	**547**
HLA - SSP	79.5%	79.6%	84.3%	79.5%	79.6%	84.3%
HLA - SBT	91.9%	86.8%	89.8%	91.9%	86.8%	89.8%
Other products and consumables	28.1%	47.6%	58.7%	28.1%	47.6%	58.7%
Services	39.4%	36.9%	10.3%	39.4%	36.9%	10.3%
Total gross profit margin	**54.9%**	**67.6%**	**66.7%**	**54.9%**	**67.6%**	**66.7%**

Source: Medigen management accounts and TBG management accounts

Notes:

1 *For illustrative purposes, translated to Australian Dollars at the average 2013 exchange rate of NTD:AUD 0.0349*

2 *For illustrative purposes, translated to Australian Dollars at the average 2014 exchange rate of NTD:AUD 0.0366*

3 *For illustrative purposes, translated to Australian Dollars at the average 1H15 exchange rate of NTD:AUD 0.0410*

We note the following regarding TBG's historical sales and gross profits:

- HLA – SBT finished good inventory was not transferred from Medigen to TBG on 1 January 2015. Revenue in relation to sale of this inventory was recorded in Medigen, resulting in the decrease in HLA – SBT revenue in 1H15;
- The decline in other products and consumables revenue from 2013 to 1H15 relates to the sale of Haoyuan with Haoyuan progressively moving to local suppliers post-sale; and
- The increase in the HLA – SSP gross margin between 2014 and 1H15 is a result of changes in product mix.

8.5.4 Overhead cost analysis

The following table sets out analysis of historical TBG operating expenses. Information prior to 1 January 2015 has been extracted from Medigen's management accounts. Information for 1H15 reflects TBG's management accounts.

Table 16 – TBG historical overhead costs

	NT$000			A$000		
	Year ended 31 December 2013	Year ended 31 December 2014	Period to 30 June 2015	Year ended 31 December 2013	Year ended 31 December 2014	Period to 30 June 2015
	Un-audited	Un-audited	Un-audited	Illustrative [1]	Illustrative [2]	Illustrative [3]
R&D: Non-HLA products	12,597	14,783	10,951	440	541	449
Sales & marketing	14,158	12,426	6,014	494	455	247
Quality control	5,014	7,690	3,231	175	281	132
Production	7,184	7,279	2,801	251	266	115
R&D: HLA products	3,438	5,622	2,496	120	206	102
Product marketing	4,402	1,887	1,119	154	69	46
General and administration	4,754	17,799	21,018	166	651	862
Total operating expenses	**51,547**	**67,486**	**47,630**	**1,799**	**2,470**	**1,953**

Source: Medigen management accounts and TBG management accounts

Notes:

1 *For illustrative purposes, translated to Australian Dollars at the average 2013 exchange rate of NTD:AUD 0.0349*

2 *For illustrative purposes, translated to Australian Dollars at the average 2014 exchange rate of NTD:AUD 0.0366*

3 *For illustrative purposes, translated to Australian Dollars at the average 1H15 exchange rate of NTD:AUD 0.0410*

We note the following regarding TBG's historical operating expenses:

— Increases in total operating expenses in 2014 and 1H15 relate primarily to TBG Xiamen operations, which commenced in the final quarter of 2014 and will ramp up towards 2016 when product manufacture is planned to commence at the facility.

9. Valuation Methodologies

9.1 Selection of Valuation Methodologies

ASIC Regulatory Guide 111 outlines the appropriate methodologies which an expert should generally consider when valuing assets or securities for the purposes of, amongst other things, takeovers, schemes of arrangement, selective capital reductions, related-party transactions and share buybacks.

These include:

- the discounted cash flow ("**DCF**") methodology and the estimated realisable value of any surplus assets;
- the application of earnings multiples appropriate for the businesses or industries in which the company or its profit centres are engaged, to the estimated future maintainable earnings or cash flows of the company, added to the estimated realisable value of any surplus assets;
- the amount that would be available for distribution to security holders on an orderly realisation of assets;
- the quoted price for listed securities, when there is a liquid and active market and allowing for the fact that the quoted price might not reflect their value, should 100% of the securities be available for sale; and
- any recent genuine offers received by the company for any business units or assets as a basis for valuation of those business units or assets.

For the purposes of this Report, fair market value is defined as the price that would be negotiated in an open and unrestricted market between a knowledgeable, willing, but not anxious purchaser and a knowledgeable, willing, but not anxious vendor acting on an arm's length basis.

Appendix C provides further detail in relation to the various valuation methods that are commonly used to assess the fair value of businesses and shares in companies. The selection of which methods are the most appropriate in any situation rests with the circumstances of the particular case.

Appropriate valuation methodologies in respect of Progen and TBG are discussed below.

9.2 Valuation Methodology - Progen

Based on our understanding of Progen, its operations and its assets, we have adopted the quoted price of its listed securities as our primary valuation method. We have also taken into account the most recent capital raisings performed by Progen and the planned capital raising as part of the proposed acquisition of TBG.

We are of the view that the quoted price for Progen's listed securities is the most appropriate valuation methodology to apply in the case of Progen for the following reasons:

- Progen's quoted market price reflects a recent period of high liquidity and rapid price discovery, despite the fact recent trading in Progen's shares since has demonstrated limited liquidity;
- Progen has not been able to provide us with forecast financial information to enable the application of the DCF valuation methodology;
- Progen has historically incurred losses across each of its business segments and there is significant uncertainty regarding Progen's ability to generate profits in the short to medium term. Consequently, we do not consider valuation of Progen based on an earnings multiple to be feasible to determine;
- The net assets of Progen may not properly reflect the value of the research related intangible assets inherent in the business and potential goodwill in the PharmaSynth business, consequently an asset based

valuation methodology is considered as part of our secondary valuation methodology, which is discussed further below.

As a secondary valuation method, we have considered a sum-of-parts valuation of Progen taking into account estimations of the fair market value of Progen's key assets: research products PI-88 and PG545; the PharmaSynth contract manufacturing business and the potential value of Progen's net deferred tax assets not recognised in the accounts of $51.1 million.

Our valuation of the issued shares in Progen based on the above methodologies is set out in Section 10 of this Report.

9.3 Valuation Methodology – TBG

We are of the view that the discounted cash flow ("**DCF**") method is the most appropriate valuation methodology to apply in the case of TBG. This method has been assessed as the most appropriate methodology for the following reasons:

- TBG has been able to provide us with sufficiently detailed and forecast financial information to enable the application of the DCF valuation methodology;
- TBG began to execute its strategic plan at the start of 2015 and has not yet established a maintainable level of historical earnings on which a valuation reflecting a multiple of future maintainable earnings could be based; and
- The net assets of TBG do not properly reflect the value of the goodwill inherent in the business, consequently an asset based valuation methodology is not considered appropriate.

The DCF method derives the value of an entity by discounting forecast cash flows of the business at an appropriate discount rate. The steps involved in determining forecast cash flows and an appropriate discount rate and a terminal value are outlined in the following sections.

9.3.1 Forecast Cash Flows

The DCF method is based on discounting the expected future net cash flows of an enterprise to their present value. A fundamental component of this method is the expected net cash flows of the entity being valued. Forecast net cash flows represent management's expectation as at the valuation date. The cash flow forecast that is relied upon varies depending upon the information that is available, the reliability with which net cash flows are able to be forecast and the particular circumstances of the entity that is being valued. Forecast cash flows for a period of three to five years from the valuation date are generally used. The forecast cash flows of TBG are discussed further in Section 11.2.

9.3.2 Determination of Appropriate Discount Rate

The discount rate to be used in under the DCF methodology to determine the value of an entity is that rate of return which an investor could expect to obtain by investing in other investments with comparable risk. This return, known as the weighted average cost of capital ("**WACC**"), is calculated by weighting the required returns on interest-bearing debt and ordinary equity capital in proportion to their estimated percentages based on the expected capital structure.

9.3.3 Determination of the Terminal Value

It is common when applying a DCF methodology to value an asset or entity that is expected to have earnings indefinitely into the foreseeable future to only have detailed cash flow forecasts for a relatively limited period of

three to five years from the valuation date. It is therefore general valuation practice to take into account a terminal value when applying a DCF methodology to the valuation of an asset or entity that is expected to have earnings indefinitely into the foreseeable future.

The terminal value of an entity at the end of a cash flow forecast period represents the value of the entity at that time, which, in turn reflects the net present value of the cash flows accruing beyond that period.

9.3.4 Derivation of Equity Value

Once the enterprise value has been determined (based on the present value of forecast cash flows), adjustments are made to derive the equity value of the company. The types of adjustments which are generally made include:

- Deduction of any interest-bearing debt and inclusion of any interest-bearing deposits;
- Application of premiums and/or discounts to the equity value. The application of such premiums and discounts will depend upon the specific circumstances of the company which is being valued, including whether the company's shares suffer from any marketability restriction when compared to the shares from which the capitalisation multiple was derived and whether a controlling or minority interest is being valued; and
- The addition of surplus assets and/or subtraction of surplus liabilities.

Our derivation of the equity value of TBG at the Valuation Date, through the application of the DCF method is set out in Section 11.

10. Valuation of Progen

10.1 Quoted price of listed securities

In determining the fair market value of the issued shares in Progen, we have given primary consideration to historical quoted prices of listed Progen securities immediately prior to Progen's announcement of the Proposed Transaction.

The application of the price that a company's shares trade on an organised exchange is an appropriate basis for valuation where:

- The shares trade in an efficient market place where 'willing' buyers and sellers readily trade the company's shares, and
- The market for the company's shares is active and liquid.

In such circumstances, the prices at which shares have traded are regarded as reflective of the elements included in the definition of "fair market value".

10.1.1 Historical share price analysis

Historical Progen share price analysis over a range of periods up to 30 April 2015 are set out in the table below. The critical period that we have observed is the period from 28 July 2014, when Progen announced that PI-88 had not met the primary endpoint of the Phase 3 PATRON clinical trial, to 30 April 2015, one day before Progen's announcement of the Proposed Transaction.

As discussed in Section 7.7.2, following the 28 July 2014 PI-88 announcement, Progen's share price fell from a closing price on 25 July 2014 of $1.20 to a closing price of $0.23 on 1 August 2014.

Table 17 – Progen historical share price analysis

Period	Low ($)	High ($)	VWAP ($)	Volume Traded	Turnover
1 month	$ 0.145	$ 0.200	$ 0.156	980,320	1.80%
3 months	$ 0.145	$ 0.200	$ 0.160	1,607,500	2.90%
6 months	$ 0.145	$ 0.225	$ 0.171	2,650,880	4.80%
28 July 2014 - 1 August 2014	$ 0.210	$ 0.300	$ 0.252	5,739,880	10.38%
4 August 2014 - 30 April 2015	$ 0.280	$ 0.150	$ 0.191	4,358,400	7.88%
28 July 2014 - 30 April 2015	$ 0.150	$ 0.300	$ 0.226	10,098,280	18.27%

Source: S&P Capital IQ and William Buck analysis

We note the following regarding Progen's share price and trading volumes between 28 July 2014 and 30 April 2015:

- In the week following Progen's 28 July 2014 PI-88 announcement, Progen shares traded heavily (10.38% turnover). VWAP for this period was $0.25;
- For the nine months from 4 August 2014 to 30 April 2015, trading in Progen shares has been light. Turnover for this period was only 7.88%. Between 4 August 2014 and 30 April 2015, Progen shares have traded between $0.15 and $0.28, with a VWAP of $0.19;

— For the period from 28 July 2014 to 30 April 2015, incorporating the week of the PI-88 announcement, turnover was 18.27% (reflecting high turnover in the week of the PI-88 announcement) and the VWAP was $0.226.

In our opinion, following the discussion set out in Section 7.7.3 and above, Progen's VWAP for the period from 28 July 2015 to 30 April 2015 reflects a period of high liquidity and rapid price discovery, despite the fact recent trading in Progen's shares has demonstrated limited liquidity.

10.1.2 Historical and proposed capital raisings

As discussed in Section 7.4.3, Progen raised equity capital twice during FY13 via the Rights Issue and the Placement.

The Rights Issue was conducted at an issue price of $0.21 and, via the Rights Issue, Progen's issued ordinary shares increased from 24,709,097 to 49,418,194. The Placement was conducted at an issue price of $0.21 and resulted in the issue of 5,867,121 new ordinary shares.

As a condition of the binding term sheet for the Proposed Transaction, Progen proposes to raise up to $12.5 million via the issue of up to 59,523,810 new $0.21 fully paid ordinary shares under the Prospectus.

10.1.3 Premium for control

When an entity is owned 100% by a single shareholder, the shareholder is said to exercise control over that entity. In some cases, control over an entity may occur at a shareholding of less than 100%. Some of the benefits commonly associated with control include the ability to:

— Control the board of directors;
— Alter the entity's Constitution;
— Appoint and remove management and set their basis for remuneration;
— Change financial and operating policies of the entity;
— Access financial information and other information;
— Acquire and dispose of assets and businesses within the entity;
— Undertake borrowings on behalf of the entity;
— Access the entity's cash flows, including the payment of dividends; and
— Integrate the entity's business, operations, distribution and products with those of the investor.

The above benefits do not attach to minority investments and accordingly, a controlling interest is generally considered more valuable than a minority interest. This difference is the control premium.

Quoted prices for listed securities represent minority interests in the relevant entity and so consideration of the fair market value of Progen based on its historical share price performance requires consideration of a suitable control premium.

For the purposes of this calculation, we have assumed a control premium applicable to Progen of 10.0%.

Our research indicates that, other than in exceptional circumstances (e.g. a competitive bid for a company), control premiums for Australian listed entities tend to range from 0.0% to 20.0%. Given the high proportion of cash in Progen's reported net assets as at 30 June 2015, we adopted an applicable control premium in the middle of this range.

10.1.4 Valuation conclusion – Quoted price of listed securities

In our opinion, the fair value of Progen's issued shares, on a controlling interest basis as at 30 April 2015, immediately prior to Progen's announcement of the Proposed Transaction, is in the range of $0.231 per share to $0.249 per share.

Table 18 – Assessment of Progen per share and equity value

	Ref	Low ($)	High ($)
Assessment of Progen share value (minority interest basis)		$ 0.210	$ 0.226
Control premium	10.3	10.0%	10.0%
Assessment of Progen share value (controlling interest basis)		**$ 0.231**	**$ 0.249**
Issued shares as at 30 June 2015	7.3	55,285,315	55,285,315
Progen equity value (controlling interest basis)		**$ 12,770,908**	**$ 13,743,929**

Source: William Buck analysis

The low range of our assessment of Progen's share value primarily reflects recent and proposed capital raisings as discussed in Section 10.1.2. The high range of our assessment of Progen's share value is based on Progen's VWAP in the period from 28 July 2014 to 30 April 2015 and reflects the period of high trading liquidity in Progen's shares from 28 July 2014 to 1 August 2014.

10.2 Sum of parts approach

10.2.1 Overview of approach

As a secondary valuation method, we have considered a sum-of-parts valuation of Progen taking into account estimations of the fair market value of Progen's key assets: research products PI-88 and PG545; the PharmaSynth contract manufacturing business and the potential value of Progen's net deferred tax assets not recognised in the accounts of $51.1 million.

A summary of our findings are set out in the table below.

On a sum of parts basis, we have concluded a valuation range, on a controlling interest basis, of $3.5 million, primarily reflecting Progen's reported net assets as at 30 June 2015, to $9.5 million, reflecting additional value for PG545 and potential goodwill in PharmaSynth.

Table 19 –Progen sum of parts valuation

	Ref	Low ($000)	High ($000)
Progen net assets as at 30 June 2015	7.4.2	3,462	3,462
Estimated value of PI-88	10.2.2	-	-
Estimated value of PG545	10.2.3	-	5,000
Estimated PharmaSynth goodwill	10.2.4	-	1,000
Value of deferred tax losses not brought to account	10.2.5	-	-
Progen equity value - sum of parts basis (controlling interest)		**3,462**	**9,462**
Issued shares as at 30 June 2015	7.3	55,285,315	55,285,315
Progen value per share - sum of parts basis (controlling interest)		**$ 0.063**	**$ 0.171**

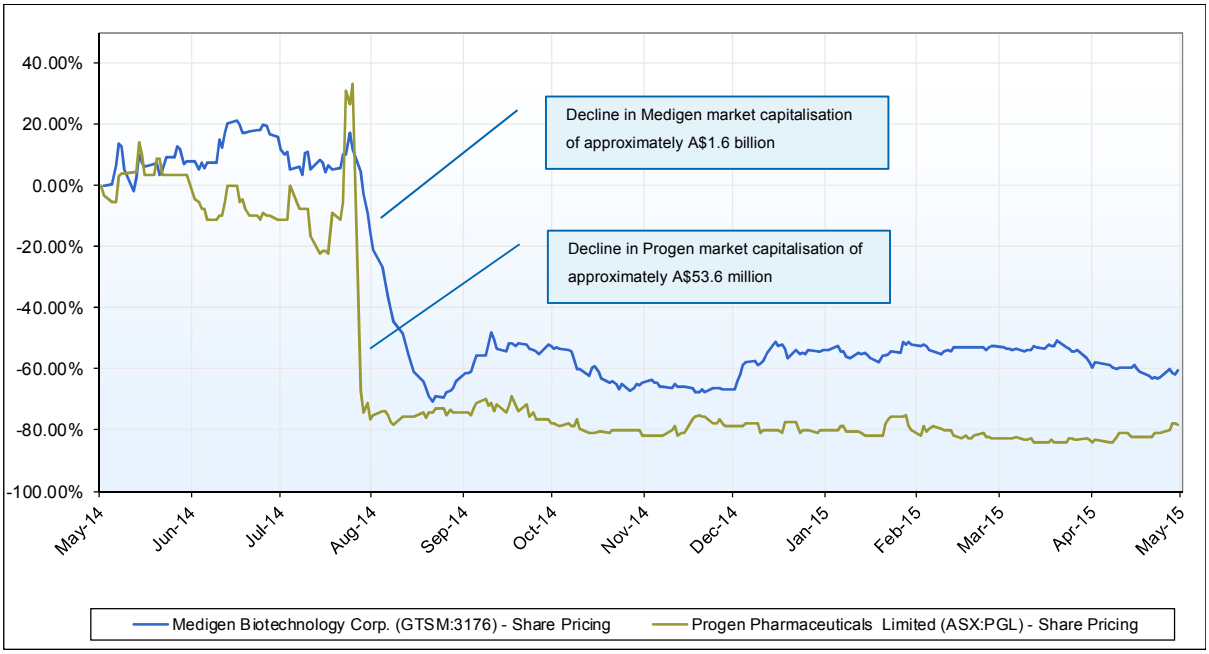
Source: William Buck analysis

Analysis of each element of our sum of parts valuation is set out in the sections that follow.

10.2.2 Valuation of PI-88

The figure set out below shows the market responses to Progen and Medigen's 28 July 2014 PI-88 announcement. Subsequent to the PI-88 announcement, Medigen's market capitalisation fell by approximately $1.6 billion and Progen's market capitalisation fell by approximately $53.6 million.

Figure 5 – Progen daily volume and share price history



Source: S&P Capital IQ, William Buck analysis and Progen ASX announcements

As discussed in Section 7.1.1, Progen announced on 27 January 2015 that on 26 January 2015, Medigen had resolved to bring forward analysis of the PI-88 Phase 3 PATRON clinical trial and would execute a study conclusion plan for PATRON with clinical sites and investigators. After the collection of the clinical data, a comprehensive statistical analysis will be carried out and a final clinical study report prepared.

The failure of the PATRON clinical trial to meet its primary endpoint may mean that the PI-88 Phase 3 clinical trials will be a failure overall. This will not be known conclusively until conclusion of the PATRON clinical trial and final statistical analysis, which is not expected until the first quarter of 2016.

Given the market responses to both the Progen and Medigen to the 28 July 2014 PI-88 announcements, it is our view that there is considerable uncertainty regarding the outlook for PI-88 and consequently we have attributed no value to PI-88 in our valuation of Progen on a sum of parts basis.

10.2.3 Valuation of PG545

PG545 is an early stage research product. Consequently, the risk is very high that its development through to commercialisation will not succeed. PG545 is partway through Phase 1 clinical trials focused on determining its maximum tolerated dose as defined by significant dose limiting toxicity.

For purposes not related to the Proposed Transaction, the Directors commissioned an independent valuation of PG545 in February 2015 which concluded a valuation for PG545 in the range of $nil to $10 million, assuming development funding for PG545 of $6.5 million. As a fire sale or divestment asset, the valuation concluded a range between $nil and $5 million.

As discussed in Section 7.4.1, Progen's current cash reserves and inflows are insufficient to continue to fund operations without a capital raising. Given that Progen is currently unable to fund the $6.5m estimated to be required to progress PG545 through to completion of a Phase 1b clinical trial, we are of the view that is inappropriate to value PG545 at higher that is estimated divestment value.

For the purposes of our valuation of Progen on a sum of parts basis, we have concluded a value for PG545 in the range of $nil to $5 million.

10.2.4 Valuation of PharmaSynth goodwill

As set out in Section 7.5.1, PharmaSynth's recent financial performance has yielded mixed results. Progen reported PharmaSynth operating results of a $0.7 million loss, a $0.7 million profit and a $1.8 million loss in FY13, FY14 and FY15, respectively.

PharmaSynth management has budgeted an operating profit for the year ending 30 June 2016 however, this budget is yet to be achieved.

PharmaSynth's net assets are fully reflected in Progen's 30 June 2015 net assets $3.5 million. PharmaSynth value in addition to its net assets would represent goodwill. In our experience, given the small scale of the PharmaSynth's business and its mixed historical results, we would limit additional goodwill attributable to PharmaSynth to 1x estimated future maintainable earnings. On this basis, for the purposes of our valuation of Progen on a sum of parts basis, we have concluded a range for the potential goodwill value in PharmaSynth of $nil to $1 million.

10.2.5 Valuation of deferred tax assets not brought to account

As discussed in Section 7.4.4, as at 30 June 2015, Progen reported net deferred tax assets not recognised in the accounts of $51.1 million. Progen's 30 June 2015 accounts note that the benefit of the deferred tax asset will only be obtained if future assessable income of a nature and amount sufficient to enable the benefit to be realised is generated.

In our view, prior to completion of the Proposed Transaction, Progen's ability to generate sufficient profitability to enable utilisation of its carry forward tax losses is highly uncertain. On this basis, for the purposes of our valuation of Progen on a sum of parts basis, we have attributed no value to Progen's net deferred tax assets not recognised in the accounts.

10.3 Overall valuation conclusion

Based on historical quoted prices of Progen's listed securities, we have concluded a Progen per share value in the range of $0.231 to $0.249 and overall equity value in the range of $12.8 million to $13.7 million. Both ranges are on a controlling interest basis.

On a sum of parts basis, we have concluded Progen per share value in the range of $0.063 to $0.171 and overall equity value in the range of $3.5 million to $9.5 million. Both ranges are on a controlling interest basis

Overall, it is likely that value in exists in Progen in excess of the book value of its net assets as at 30 June 2015 however, due to the nature of its assets and historical financial performance, this value is difficult to estimate.

Based on the foregoing discussion, we have concluded a Progen per share value in the range of $0.171, being our maximum on a sum of parts basis, to $0.249, our maximum on the basis of quoted historical share prices, resulting in overall equity value in the range of $9.5 million to $13.7 million on a controlling interest basis.

11. Valuation of TBG

11.1 DCF valuation of TBG

We have determined the equity value in TBG, on a controlling interest basis, to be in the range of $10.1 million to $67.8 million based on a DCF valuation.

TBG management has prepared detailed annual forecasts from 1 July 2015 to 31 December 2024 (the "**TBG Forecasts**"). The TBG Forecasts form the basis of our DCF valuation of TBG and are discussed further below.

We consider a wide valuation range for TBG to be reasonable because TBG is currently incurring losses due its stage of product development and a large proportion of TBG Forecasts revenues are derived from products which have not yet been developed by TBG in areas of molecular diagnostics that are adjacent to TBG's core historical experience around HLA typing. We have attempted to bring these factors into consideration via the following:

- The TBG Forecasts assume successful execution of TBG's strategic plan. We have sensitised the TBG Forecasts by applying risk factors to the successful development and release to market of products comprising TBG's product pipeline. Our determination of TBG's enterprise value utilises the TBG Forecasts and forecast cash flows derived through our sensitivity analysis; and
- We have determined a reasonably high WACC range for TBG, reflective of an early stage company yet to complete the development of its core products.

The following table summarises the enterprise and equity value ranges we have determined for TBG.

Table 20 – Enterprise and equity valuation of TBG

	Low	High
Enterprise value (NT$000)	**334,285**	**1,710,119**
Exchange rate of NTD:AUD 0.0420	0.0420	0.0420
Enterprise value (A$000)	**14,040**	**71,825**
Add: Cash (A$000)	6,518	6,518
Less: Debt[1] (A$000)	(10,500)	(10,500)
Equity value (controlling interest basis) (A$000)	**10,058**	**67,843**

Source: William Buck's assessment

Note 1: The TBG Forecasts assume that A$10.5 million of Progen's Proposed Capital Raising are used to fund TBG capital expenditure and working capital requirements. For the purposes of our valuation workings, we have treated this amount as notional debt so as not to double count the impact of the Proposed Capital Raising in our assessment of the Proposed Transaction.

The NT$ enterprise value range shown above is derived from the following summary of our TBG valuation analysis.

Table 21 – TBG enterprise value summary

	Low WACC: 28.8% (NT$000)	High WACC: 21.1% (NT$000)
Enterprise Value: TBG Management Base Case Forecasts	830,301	1,710,119
Enterprise Value: William Buck Sensitised Forecasts	334,285	807,218
Adopted Enterprise Value range	**334,285**	**1,710,119**

Source: William Buck analysis

An explanation of each component of the valuation set out in the table above is provided in the sections that follow.

11.2 TBG Forecasts

The TBG Forecasts comprise detailed annual profit and loss, balance sheet and cash flow forecasts from 1 July 2015 to 31 December 2024. The first forecast period runs from 1 July 2015 to 31 December 2015.

We have reviewed the TBG Forecasts to ensure they provide reasonable basis for use in our DCF valuation. We have also reviewed TBG's detailed analysis of the Chinese molecular diagnostics market ("**TBG Market Analysis**").

As discussed below, the TBG Market Analysis informs the TBG Forecasts with respect to individual product pricing and estimated future sales volumes.

11.2.1 TBG product development pipeline

TBG's product development pipeline is included in the TBG Forecasts and determines the timing of forecast revenue in respect of each product. The product development pipeline maps finalisation of research and development, preparation of pilot manufacturing, pilot manufacturing, examination for registration, clinical trial and submisson of registration data for each product.

In addition to its existing portfolio of HLA molecular diagnostics typing products, TBG is currently developing 15 molecular diagnostics products across HLA, oncology, virology and microbiology. TBG plans to launch these products from late in 2016 through to the end of 2018.

TBG is also developing a proprietary Real-Time PCR analysis machine, the next generation ChiTas machine and an end-to-end clinical automation system which will incorporate both the TBG Real-Time PCR and the next generation ChiTas. TBG plans to launch these products through 2017 and 2018.

From January 2016, TBG plans to commence development of a further 18 molecular diagnostics products across oncology, virology, microbiology and genetics. TBG plans to commence launching these products primarily from the start of 2019.

11.2.2 TBG Market Analysis

The TBG Forecasts assume China as the primary market for TBG product sales, with Taiwan as a particular focus for certain products and services.

TBG management has conducted a detailed market analysis for each molecular diagnostics product in its development pipeline including assessment of the addressable market for each product, current competitor pricing and an estimation of achievable market share.

11.2.3 Forecast revenue

Forecast revenue reflects TBG's product development pipeline combined with pricing assumptions and estimated sales volumes derived from the TBG Market Analysis.

11.2.4 TBG Forecasts – other key assumptions

We note the following regarding other key TBG Forecasts assumptions:

- The gross margin assumptions by product in the TBG Forecasts reflect the historical margin performance of existing products, the findings of the TBG Market Analysis and TBG management's expectations;
- The TBG Forecasts assume progressive increase in TBG headcount from a current workforce of 50 employees through to a workforce of 172 employees by 2023. The TBG Forecasts assume growth in employee costs of 10% per annum;
- The TBG Forecasts assume selling costs calculated as 10% of total sales from 2H15 to 2019. From 2020, selling costs increase to 15% to total sales. These assumptions are high level estimates provided by TBG management;
- The TBG Forecasts assume general and administrative costs calculated in the range of 8% to 9% of total sales from 2H15 to 2024. These assumptions are high level estimates provided by TBG management;
- The TBG Forecasts assume product approval and registration costs in the range of approximately A$150,000 to A$350,000 per product, based on TBG management's expectations;
- The TBG Forecasts assume an income tax rate of 25%, in line with China's standard income tax rate where the majority of forecast TBG profits are expected to be generated;
- The TBG Forecasts assume capital expenditure / research and development costs in relation to development of the proprietary Real-Time PCR analysis machine, the next generation ChiTas machine and end-to-end clinical automation system totalling approximately A$4.2 million from 2H15 to 2017. These cost estimates are based on TBG management's discussions the third parties that will be developing the prototypes for these machines;
- The TBG forecasts assume further capital expenditure of approximately A$2.7 million in 2016 in relation to completion of the Xiamen facility and approximately A$21 million in 2022 in relation to an option to acquire TBG's premises in Taipei from Medigen;
- The TBG Forecasts make the following high level working capital assumptions: (i) trade debtors will be collected in 90 days, (ii) TBG will carry inventory equivalent to approximately 6 months' cost of sales, and (iii) trade creditors will be paid in 60 days.

11.2.5 TBG Forecasts – William Buck sensitivity

The TBG Forecasts assume successful execution of TBG's strategic plan, in line with the findings of the TBG Market Analysis. As a sensitised scenario to the TBG Forecasts, in consultation with TBG management, we have applied risk factors to the successful development and release to market of products comprising TBG's product pipeline as follows.

Table 22 – TBG Forecasts – William Buck sensitivity parameters

Product completion timeline	Development status	Estimated probability of successful release
Products completing in 2016	Development has commenced	95%
Products completing in 2017	Development has commenced	85%
Products completing in 2018	Development has commenced	80%
Products completing in 2018	Development to commence	60%
Products completing in 2019	Development to commence	40%

Source: William Buck analysis

In preparing a a sensitised scenario to the TBG Forecasts, all other assumptions have remained static.

11.3 Key DCF valuation assumptions

11.3.1 Weighted average cost of capital

As noted in Section 9.3.2, the discount rate to be used in determining the value of a business or company is that rate of return which an investor could expect to obtain by investing in other investments with comparable risk. This return, known as the WACC, is calculated by weighting the required returns on ordinary equity capital and on interest-bearing debt in proportion to their estimated percentages based on the expected capital structure.

Detailed calculation of a WACC range applicable to TBG is set out in Appendix E. Based on our calculations, we have adopted a post-tax WACC applicable to TBG in the range of 21.1% to 28.8%.

The high WACC is primarily reflective of the fact that TBG Forecasts revenues are primarily derived from products which TBG is yet to develop, in areas of molecular diagnostics adjacent to TBG's historical experience of developing, manfacturing and selling HLA typing kits.

11.3.2 Terminal value

As noted in section 9.3.3, it is general valuation practice to take into account a terminal value when applying a DCF methodology to the valuation of an asset or entity that is expected to have earnings indefinitely into the foreseeable future. The terminal value of an asset at the end of a cash flow forecast period represents the value of the asset at that time, which, in turn reflects the net present value of the cash flows accruing beyond that period.

There are a number of methods available for use in determining the terminal value. These methods include:

- determining the likely exit earnings yield and capitalising expected earnings for the year following the end of the forecast period at that exit earnings yield. This method results in a hybrid of cash flows and earnings and produces a situation where the value of the business can be manipulated by lengthening or shortening the time horizon;

- assessing the economic life of the entity and also making assumptions about the rate and variability of growth. This approach is difficult to apply in practice because of the number of unknowns involved and the sensitivity of the valuation result to the assumptions made; and
- assuming a constant growth in net cash flows. This method may represent the best compromise, and has the advantage of being consistent with the present value techniques used up to the end of the forecast period because the same discount rate can be used.

We consider that the third option (i.e. assuming a constant growth in net cash flows) is the best method by which to determine the terminal value of TBG at 2024, being the final year of the TBG Forecasts.

In order to calculate the terminal value, we have applied the constant growth perpetuity formula, i.e. estimated cash flows in 2024 divided by the difference between the discount rate (refer to Section 11.3.1) and the growth rate (we have assumed a growth rate beyond 2024 of 3% per annum).

11.4 Adjustments for net debt

In order to determine the equity value of TBG, we have

- added interest-bearing deposits held by TBG at 30 June 2015 of approximately A$6.5 million to the derived enterprise value. Interest-bearing deposits comprised cash at bank; and
- subtracted notional debt of A$10.5 million as at 30 June 2015 from the derived enterprise value. As discussed above, the TBG Forecasts assume equity funding in 2H15 of approximately A$10.5 million being a large proportion of Progen's Proposed Capital Raising (refer Section 5.2). So as not to double count the value impact on Progen of the Proposed Capital Raising, we have treated the equity funding assumed in the TBG Forecasts as debt.

12. Qualifications and independence

12.1 Qualifications

William Buck has extensive experience in the provision of corporate finance advice including with respect to mergers and acquisitions.

William Buck is an authorised representative of William Buck Wealth Advisors (NSW) Pty Ltd which holds an Australian Financial Services Licence issued by ASIC for giving expert reports pursuant to the Listing Rules of the ASX and the Act.

Mr Mark Calvetti and Mr Daniel Coote of William Buck was responsible for the preparation of this Report.

Mr Mark Calvetti is a Director of William Buck. He holds a Bachelor of Business (Accounting and Finance) degree from the University of Technology, Sydney. Mr Calvetti has over 28 years' experience in Corporate Finance and has had extensive experience in the areas of mergers and acquisitions, litigation support, preparation and review of business feasibility studies, financial investigations, business valuations, independent expert's reports and due diligence reviews. His valuation experience covers a wide range of industries for both public and private companies. Accordingly, Mr Calvetti has the appropriate experience and professional qualifications to provide the advice offered.

Mr Daniel Coote is a Director of William Buck, is a Chartered Accountant, and holds Bachelor of Commerce and Master of Applied Finance degrees from Macquarie University. Mr Coote has over 15 years' experience in Chartered Accounting and regularly advises clients on corporate transactions and is experienced in the provision of valuations of shares and businesses for a variety of applications. Accordingly, Mr Coote has the appropriate experience and professional qualifications to provide the advice offered.

12.2 Independence and Declarations

William Buck is not aware of any matter or circumstance that would preclude it from preparing this report on the grounds of independence either under regulatory or professional requirements. In particular, we have had regard to the provisions of applicable pronouncements and other guidance statements relating to professional independence issued by Australian professional accounting bodies and ASIC.

William Buck considers itself to be independent in terms of RG 112: Independence of Experts, issued by ASIC.

Neither William Buck, nor any of its related entities, have acted for Progen with regard to any matter in the past and we are not aware of any matters or relationship that could be regarded as capable of affecting its ability to provide an unbiased opinion in relation to the Proposed Transaction.

William Buck is entitled to receive a fee for the preparation of this Report of approximately $67,000 plus GST and disbursements. This fee is not contingent on the outcome of the Proposed Transaction. Except for this fee, William Buck has not received and will not receive any pecuniary or other benefit, whether direct or indirect, for or in connection with the preparation of this Report and accordingly, does not have any pecuniary or other interests that could reasonably be regarded as being capable of affecting its ability to give an unbiased opinion in relation to the Proposed Transaction.

One draft of this Report was provided to the Directors of Progen for review of factual accuracy, as opposed to opinions, which are the responsibility of William Buck alone. Certain changes were made to the report as a result

of the circulation of the draft report. However, no changes were made to the methodology, conclusions or recommendations made to the Non - Associated Shareholders as a result of issuing the draft reports.

The statements contained in this Report are given in good faith and have been derived from information believed to be reliable and accurate. We have examined this information and have no reason to believe that any material factors have been withheld from us.

13. Appendices

13.1 Appendix A – Sources of Information

a) Progen announcements in relation to the terms of the Proposed Transaction;

b) Notice of General Meeting to be issued in relation to the Proposed Transaction;

c) Draft Share Sale Agreement;

d) Copy of Progen share register as at 13 October 2015;

e) Discussions and correspondence with management of Progen and TBG;

f) Progen 2015 Preliminary Final Report;

g) Progen Annual Reports for 2012, 2013 and 2014;

h) S&P Capital IQ for historical Progen share price information and comparable company analysis;

i) www.asx.com.au for historical Progen ASX announcements;

j) Audited TBG accounts for the years ended 31 December 2013 and 31 December 2014;

k) TBG management accounts for the six months ended 30 June 2015;

l) Medigen management accounts in relation to its HLA business for the years ended 31 December 2013 and 31 December 2014; and

m) TBG forecasts for the period from 1 July 2014 to 31 December 2024.

13.2 Appendix B – Abbreviations and Definitions

Term	Definition
Act	Corporations Act 2001
Announcement Date	The date that Progen signed a binding term sheet to acquire 100% of issued share capital of TBG Inc. (1 May 2015)
ASIC	Australian Securities and Investments Commission
ASX	Australian Securities Exchange
BDO	BDO Audit Pty Ltd
CAPM	Capital asset pricing model
cGMP	cyclic guanosine monophosphate
Company	Progen Pharmaceuticals Limited
DCF	Discounted cash flow
Directors	The Directors of Progen
Explanatory Statement	The Explanatory Statement included in Progen's 2015 Notice of Meeting and Explanatory Statement
FYXX	Financial year ended 30 June 20xx
Haoyuan	Shanghai Haoyuan Biotech Co., Ltd
HBV	Hepatitis B virus
HCV	Hepatitis C virus
HLA	Human leukocyte antigen
IVD	In Vitro Diagnostics
Listing Rules	ASX Listing Rules
Medigen	Medigen Biotechnology Corp.
NAT	Nucleic acid testing
Non-Associated Shareholders	The non-associated shareholders are those shareholders in Progen whose votes are not to be disregarded in voting on the resolutions relating to the Proposed Transaction
PCR	Polymerase Chain Reaction
PI-88	Muparfostat (PI-88)
Placement	Progen private placement concluded 27 May 2013
Progen	Progen Pharmaceuticals Limited
Proposed Capital Raising	Progen capital raising in the order of $10 million to $12.5 million at $0.21 per share
Proposed Transaction	Acquisition by Progen of 100% of the issued share capital of TBG Inc.
Prospectus	Progen prospectus to raise up to $12.5 million via the issue of up to 59,523,810 new shares
Report	This Independent Expert's Report, dated 16 October 2015
Rights Issue	Progen rights issue concluded 22 May 2013
SBT	Sequence based typing
SFDA	Chinese State Food And Drug Administration
Shareholders	Shareholders of Progen
SSP	Sequence-specific primer
TBG	TBG Inc.
TBG Forecasts	TBG profit and loss, balance sheet and cash flow forecasts for the period from 1 July 2014 to 31 December 2024
TBG Market Analysis	TBG's analysis of the Chinese molecular diagnostics market
TBG Taiwan	TBG Biotechnology Corp.
TBG Xiamen	TBG Biotechnology Xiamen INC
Texas BioGene	Texas BioGene, Inc.

Term	Definition
VWAP	Volume weighted average price
WACC	Weighted average cost of capital
William Buck , we, us, our	William Buck Corporate Advisory Services (NSW) Pty Ltd ACN 133 845 637

13.3 Appendix C - IVD Industry Overview

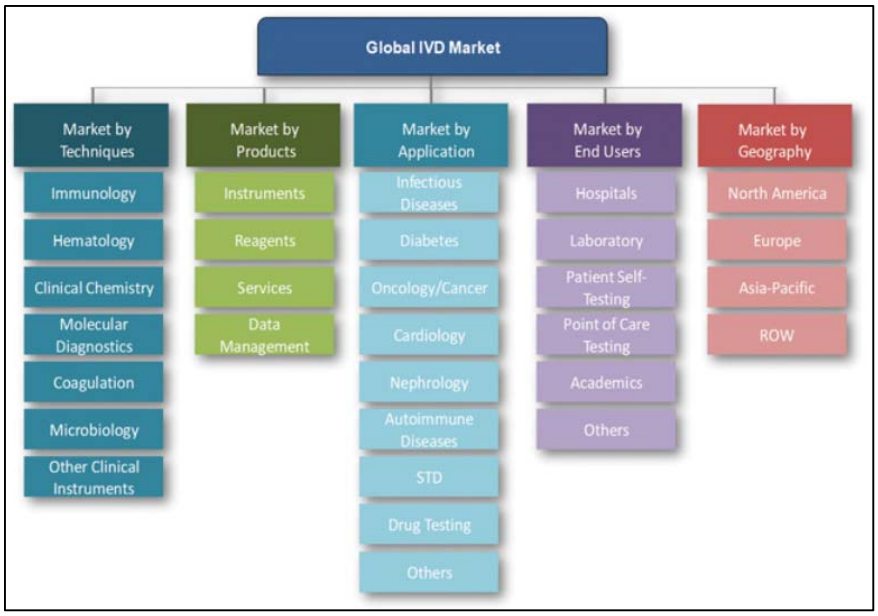
13.3.1 Global in-vitro diagnostics (IVD) sector

IVD refers to techniques of diagnostic tests used to diagnose and detect diseases or infection in a controlled environment and monitor prescribed treatments and assessment of medical intervention outside of the human body. The information obtained from IVD allows for earlier and more targeted treatment, increasing the efficiency of the healthcare system.

13.3.2 Categories of IVD sector

There are a number of ways for which the IVD market is typically categorised, these are summarised below:

Figure 6 – Global IVD market



Source: http://www.genengnews.com/insight-and-intelligence/multifaceted-ivd-market-growing-rapidly/77900266/

13.3.3 External drivers of the IVD industry

Key external drivers that influence trends in the global IVD industry include:

- *Demographics: ageing populations* – Highly relevant to the IVD industry is the higher level of healthcare spending in those above the age of 65 than those in a younger age bracket due to age-related illnesses and higher susceptibility to chronic and infectious diseases;
- *Demographics: increase income levels* – Improved awareness of healthcare and a shift towards preventative healthcare coincides with an increase level of disposable income and increasing demand for IVD products and services;
- *Global increase in chronic and infectious diseases:* The early detection and treatment of chronic and infectious disease has become increasingly important, increasing the demand for IVD products, and the demand for new developments in this field to shorten the window of detection and more 'real time' therapy monitoring. World Health Organisation research showed that chronic and infectious diseases are increasing globally. With urbanisation of the population, impact of infectious diseases,

like the common influenza, tends to be quicker and affect a larger proportion of the population. Similarly, changes in diet and lifestyles have been identified as the main contributor to chronic diseases, expected to account for 57% of mortality by 2020;

- *Global research and development funding*: public and private expenditure in research and development in the IVD industry is a key source of revenue. Government priorities and allocated spending to the research and development of the IVD industry will directly impact the level of new technological developments in IVD techniques and services; and
- *Minimal invasive technologies:* The emergence of non-invasive or minimal invasive diagnostic medical techniques have increased the ability for patients to provide samples with little or no pain allowing medical practitioners to more easily access vital health information with little inconvenience to the patient.

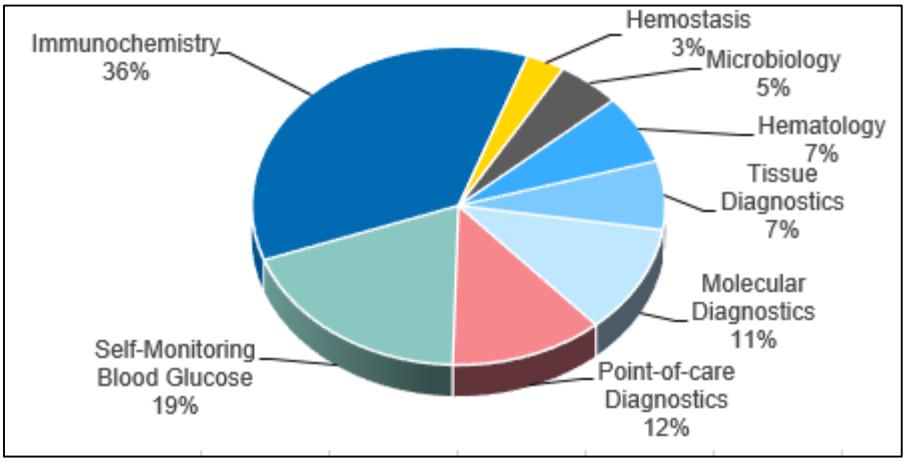
13.3.4 Current market conditions and main players in the IVD industry

The IVD market is currently undergoing a period of growth, and this growth is expected to continue for a number of years. Based on Allied Market Research 2013, the global IVD market was approximately US$53.3 billion in 2013 and expected to reach US$74.7 billion by 2020.

While the USA is the largest single IVD industry market, and will remain influential in the development of the IVD industry, it is expected that growth in USA, Japan and Europe will be slow. The IVD market in emerging economies in Latin America, India and China are expected to grow rapidly, with China forecast to be the second largest IVD market by 2020.

On the basis of technology, Immunochemistry dominates the market at approximately 36% of IVD revenue in this area (in 2012) followed by Self-Monitoring Blood Glucose at 19%. While there are still growth expected in these sectors, the growth rate is not expected to be high as the products in these sectors are in their mature stage of the life cycle.

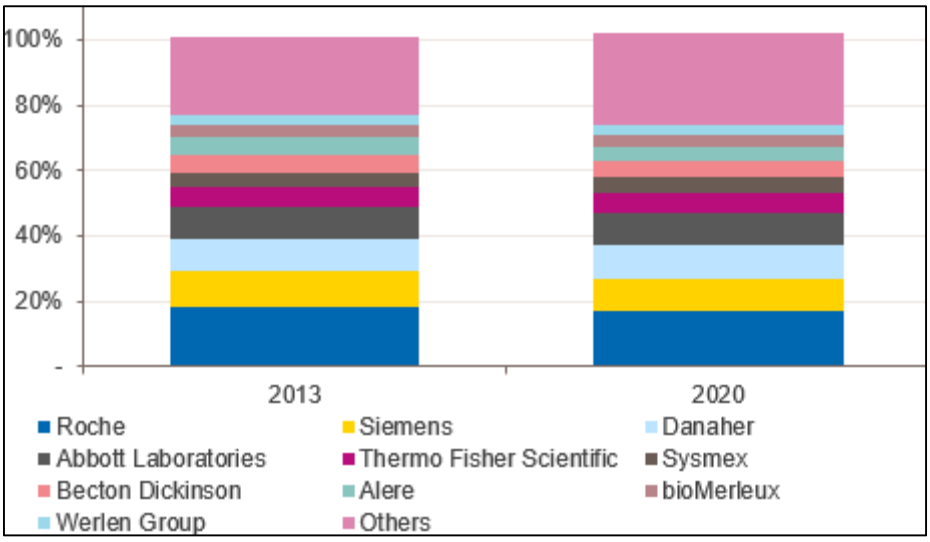
Figure 7 – Segmentation of global IVD market



Source: http://www.medicalbuyer.co.in/index.php?option=com_content&task=view&id=4618&Itemid=48

The IVD industry is closely held, with the top 10 players in the market holding close to 80% of global market share. The key players in the IVD industry and their markets share are as follows:

Figure 8 – Major IVD market participants



Source: EvaluateMedTech (18 Sept 2014)

It is expected that merger and acquisition activity will increase as larger businesses acquire niche players with an aim to increase their product suites and footprint in the various IVD technologies.

13.3.5 Market outlook for the global molecular diagnostics segment

Molecular diagnostics is the fastest growing segment of the IVD market in the current economic environment and is expected to grow at a CAGR of 9.7% over the 2013 to 2018 period, reaching US$47.9 billion by 2018.

Segmenting by application, infectious disease has the largest market share, followed by oncology, genetic disorders, blood screening and microbiology. While infectious disease is still highly relevant and will continue to hold the majority of the market share, the biggest growth area is expected to be oncology. By technology, PCR held the largest market share in 2013, with microarray expected to grow significantly by 2018. By product, reagents occupy the largest market share and expected to continue to grow rapidly from 2013 to 2018.

13.3.6 China market outlook – IVD and molecular diagnostics

The Chinese IVD market is in its early growth stage, and it is expected that the growth potential for IVD and molecular diagnostics will be significant. As at 2012, the China biotechnology market was the 4th largest globally estimated at US$19 billion, and expected to grow to US$55 billion by 2020 becoming the 2nd largest market globally.

The key drivers of growth in the Chinese IVD market are expected to be as follows:

- *Government policy* - In 2012 the Chinese government issued the "Biotechnology development plan" and of three priority tasks, the second relates to the development of high end technological development in biotechnology and strong push for IVD, especially in the areas of early detection and screening, prescribed treatment monitoring, assessment of treatment effectiveness and genetics screening. China plans to achieve this aim through the development of local molecular diagnostic industries, including the development of high accuracy kits and reagents, particularly in the areas of immunology, virology and targeted therapy.

An earlier government issued report on the "Development plan for Females in China" emphasised the need for better detection and treatments of health issues typically affecting women specifically noting breast and cervical cancer. The report stated that the government will provide support for women to be provided with regular screening and better access to therapy.

There is also a push for locally developed products in IVD, especially molecular diagnostics, with government providing preferential funding support to those manufacturing IVD products, services and technologies from China.

- *Demographics: Ageing population, increasing healthcare awareness and higher disposable income levels* – Based on the consensus completed by the Chinese Government in 2012, the average income for those in the cities and country-side rose from RMB7,702 and RMB2,475 in 2002 to RMB21,810 and RM6,977, respectively. The increase of disposable income has assisted with the population's awareness of health issues and willingness to undertake early detection screening and more constant therapy monitoring.

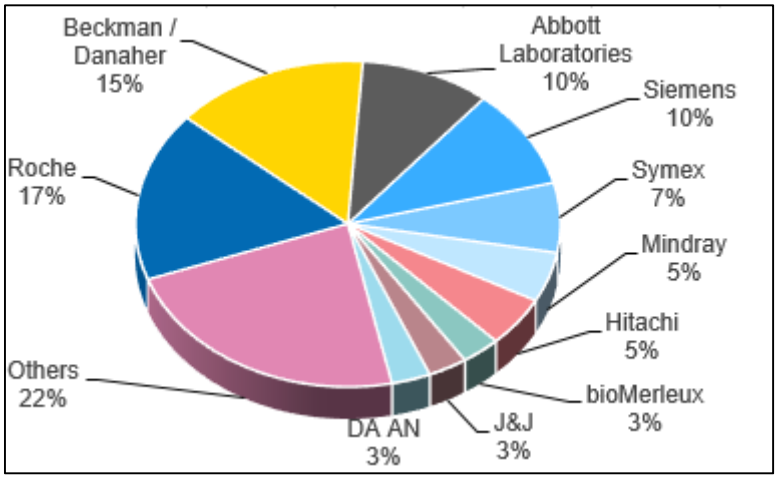
  With an ageing population, brought about by three generations of the single-child policy, there is increasing demand on healthcare providers to provide effective and efficient healthcare services to the population. The government has pushed for early detection and treatment to reduce the pressure on the healthcare system and this will bring about an increased growth in the IVD sectors.

- *Infectious and chronic disease on the rise*: Chronic health issues stemming from a change of diet to more foods of high-fat, high calories, and change of lifestyle with smoking and less physical activity has led to a prevalence of chronic disease in China. The aging population is most susceptible to infectious diseases, brought about by closer living conditions increasing the prevalence of infectious diseases.

- *Automation*: With the development of IVD technologies and the push for more efficient and effective detection and treatment, there is a high demand for fully automated systems that will allow for the processing of a higher quantity of samples with higher quality and accuracy. Current systems involve a level of manual handling, automation of the full process will allow for higher sensitivity and quality of results. The added value from this system is expected to exceed the concerns on pricing and will lead the way in the growth of the IVD market

The key players in the China IVD markets is summarised as follows:

Figure 9 – Major Chinese IVD market participants

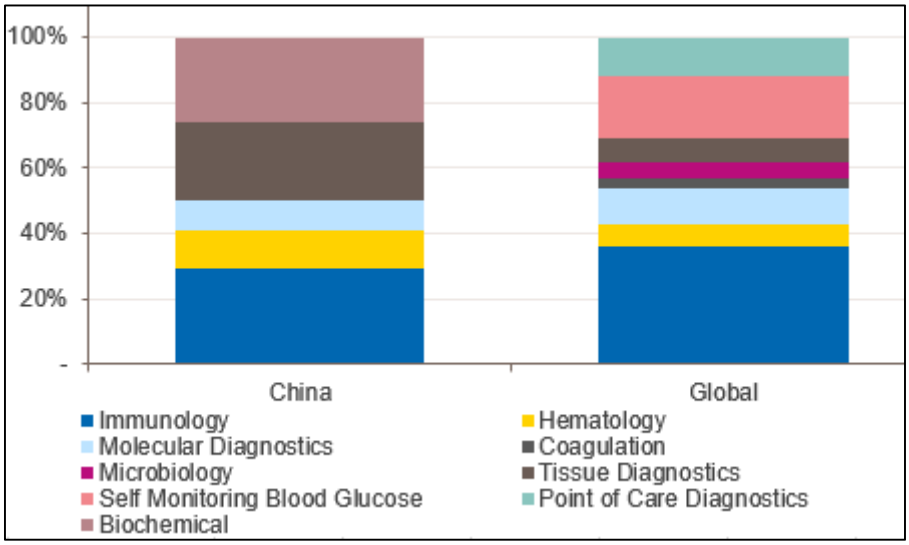


Source: Roche 2012

Whilst the majority of markets share is held by international corporates, it is expected that local companies will increase in their market share by 2020 significantly. Locally manufactured products are expected to be offered to the market at a significantly lower price than currently imported products, as manufacturing locally will not only benefit from the lower cost of labour and logistic costs but also from Government preferential funding.

The Chinese IVD market by application, compared to the global IVD market, is set out in the following table.

Figure 10 – Comparison of Global and Chinese IVD Market by Application



Source: Kalorama

Immunology is expected to continue to dominate the Chinese IVD market with market share expected to increase to 35% by 2018.

Molecular diagnostics is forecast to be an area of increasing demand for use within infectious diseases, chronic diseases and other areas. CAGR in the range of 18% to 25% has been forecast for the period from 2013 to 2018, based on the "China Biological Industry Development Report (2011)" co-written by the National Development and Reform Commission and The Chinese Society of Biomedical Engineering. .

13.4 Appendix D – Valuation Methodologies for Businesses and Shares

Discounted Cash Flow ("DCF") Method

The DCF approach is a technically superior methodology since it allows for fluctuations in future performance to be recognised. This methodology derives the enterprise value of an entity by discounting its expected future cash flows.

In applying the DCF valuation methodology consideration must be given to the following factors:

- The estimated future cash flows of the business for a reasonable period including an assessment of the underlying assumptions;
- An estimate of the terminal value of the business at the end of the forecast period; and
- The assessment of an appropriate discount rate that quantifies the risk inherent in the business and reflects the expected return which investors can obtain from investments having equivalent risks.

Capitalisation of Estimated FME

The capitalisation of estimated FME method is useful as a primary valuation technique where the DCF methodology cannot be used. This method derives the enterprise value of the entity and requires consideration of the following factors:

- Selection of an appropriate level of estimated FME, having regard to historical and forecast operating results and adjusting for non-recurring or non-business items of income and expenditure in addition to any known factors likely to affect the future operating performance of the business;
- Profits arising from assets which are surplus to the operations of the sustainable business are eliminated and the assets, net of any liabilities relating thereto, treated incrementally; and
- Determination of an appropriate capitalisation multiple having regard to the market rating of comparable companies or businesses, the extent and nature of competition in the industry, quality of earnings, future growth opportunities, asset backing and relative investment risk.

Net Asset Backing Approach

Asset based valuations involve the determination of the fair market value of a business based on the net realisable value of the assets used in the business.

Valuation of net realisable assets involves:

- Separating the business or entity into components which can be readily sold, such as individual business units or collection of individual items of plant and equipment and other net assets; and
- Ascribing a value to each based on the net amount that could be obtained for this asset if sold.

The net realisable value of the assets can be determined on the basis of:

- Orderly realisation: this method estimates fair market value by determining the net assets of the underlying business including an allowance for the reasonable costs of carrying out the sale of assets, taxation charges and the time value of money, assuming the business is wound up in an orderly manner. This is not a valuation on the basis of a forced sale where the assets might be sold at values materially different from their fair market value;

- Liquidation: this is a valuation on the basis of a forced sale where the assets might be sold at values materially different from their fair market value; or
- Going concern: the net assets on a going concern basis estimates the market value of the net assets but does not take into account any realisation costs. This method is often considered appropriate for the valuation of an investment or property holding company. Adjustments may need to be made to the book value of assets and liabilities to reflect their going concern value.

The net asset backing value of a trading company's assets will generally provide the lowest possible value for the business. The difference between the value of the company's identifiable net assets (including identifiable intangibles) and the value obtained by capitalising earnings is attributable to goodwill.

The application of the net asset backing methodology is appropriate where a company:

- Is not trading, or
- Is making sustained losses or profits but at a level less than the required rate of return, or
- Is close to liquidation, or
- Is a holding company, or
- Holds assets which are liquid.

It is also relevant to businesses which are being segmented and divested and to value assets that are surplus to the core operating business. The net realisable assets methodology is also used as a check for the value derived using other methods.

These approaches ignore the possibility that the company's value could exceed the realisable value of its assets.

Share Market Trading History

The application of the price that a company's shares trade on an organised exchange is an appropriate basis for valuation where:

- The shares trade in an efficient market place where 'willing' buyers and sellers readily trade the company's shares, and
- The market for the company's shares is active and liquid.

In such circumstances, the prices at which shares have traded are regarded as reflective of the elements included in the definition of "fair market value".

Recent Share Subscription Prices

The price at which unrelated parties have recently subscribed for shares in a company can be an appropriate methodology to apply in valuing the issued equity in the company, if those prices were paid in freely negotiated transactions in an open and unrestricted market between knowledgeable, willing, but not anxious, parties acting at arm's length.

In applying this methodology it is relevant to consider the following factors:

- The timing of any shares issues;
- Any pre-existing relationship (if any) between the subscribers to the shares and the company;

- The level of knowledge that the parties subscribing to the shares could reasonably be assumed to possess; and
- The extent of any material changes in circumstances that have occurred between the date on which the shares were issued and the valuation date.

Capitalisation of Estimated Future Maintainable Dividends

The mechanics of the capitalisation of estimated future maintainable dividends valuation method is similar to that of the capitalisation of estimated future maintainable earnings method. The methodology is most commonly applied to minority holdings in private companies and unlisted public companies. It requires the estimation of future maintainable earnings, the likely distribution of such earnings as dividends and the application of an appropriate dividend yield or discount rate.

The capitalisation of estimated future maintainable dividends methodology is generally applicable only where the equity interest subject to valuation has no effective control in the determination of dividend policy.

13.5 Appendix E – TBG WACC calculations

Our calculation of the appropriate range of post-tax WACC applicable to TBG is set out in the following table.

Table 23 – TBG WACC calculation

	Component	High WACC	Low WACC
Risk-free rate	(Rf)	3.7%	3.7%
Equity beta	(β)	0.93	0.93
Equity market risk premium	(Rm - Rf)	8.2%	6.9%
Cost of equity (before adjustments)	**(Ke)**	**11.3%**	**10.1%**
Company Size Premium	RPs	10.0%	6.0%
Product development execution risk	RPi	7.5%	5.0%
Cost of equity (after adjustments)		**28.8%**	**21.1%**

Source: William Buck's assessment

Based on the above, in our opinion the appropriate post-tax WACC discount rate applicable to TBG is in the range of 21.1% to 28.8%.

As noted in Section 9.3.2, the discount rate to be used in determining the value of a business or company is that rate of return which an investor could expect to obtain by investing in other investments with comparable risk. This return, known as the weighted average cost of capital ("**WACC**"), is calculated by weighting the required returns on interest-bearing debt and ordinary equity capital in proportion to their estimated percentages based on the expected capital structure.

The general formula for calculating the after tax WACC is:

WACC	=	Kd x (d%) + Ke x (e%)
where:		
Kd	=	After-tax return on debt capital
d%	=	Debt capital as a percentage of the sum of debt and ordinary equity capital (at market value)
Ke	=	Rate of return on ordinary equity capital
e%	=	Value of ordinary equity capital as a percentage of the sum of debt and ordinary capital (at market value)

TBG is currently 100% equity funded and there are no plans to make use of external debt in the short to medium term. Consequently, in determining an appropriate WACC for TBG, we have considered cost of equity but have not considered cost of debt.

Cost of Equity

The cost of equity (Ke) gives an estimate of an equity investor's required rate of return for a given level of investment risk. The most globally accepted methodology used to determine the cost of equity is the capital asset pricing model ("**CAPM**").

The CAPM is a theoretical model which assumes that a positive relationship exists between the risk and expected return of an asset in an efficient capital market. The CAPM can be expressed in the following form:

Ke	=	R*f* + β x (R*m* – R*f*) + RPs + RPi
w*here:*		
R*f*	=	Risk free rate of return
β	=	Risk of the relevant asset
(R*m* – R*f*)	=	Market risk premium
RPs	=	Entity size premium
RPi	=	Entity specific risk premium

Risk Free Rate of Return

When valuing a long life asset, the best approximation of the risk free rate (Rf) is a Government borrowing instrument with a term which most closely matches the term of the cash flows to which it will be applied. The risk free rate has therefore been based on the average yield over the last 10 years on marketable bonds issued by the Chinese Government with a life of 10 years as at 30 June 2015, of 3.7%.

Equity Beta

The equity beta of an asset is a measure of the variance of the return gained from holding that asset compared with a return on the market and represents the risk profile of that particular asset. A commonly used approach to determine the equity beta of an asset is to review the equity betas of comparable companies.

William Buck has identified a number companies listed on stock exchanges around the world whose risk profile may be regarded as broadly comparable to that of TBG. The companies identified are engaged in In Vitro Diagnostics and Molecular Diagnostics products and services. While we found that the operations of these companies are not identical to those of TBG, we consider that these companies would be broadly comparable as they operate in a similar industry and thus are influenced by similar demand drivers and are exposed to similar risks as TBG. Consequently, we are satisfied that they provide an appropriate benchmark against which to determine the beta applicable in calculating TBG's cost of equity.

Information regarding the selected comparable companies, including a description of their business activities, quote symbol and market capitalisation, is set out in Appendix F.

William Buck has reviewed the equity betas of the comparable companies and calculated an equity beta of 0.93, which we consider appropriate to apply to the TBG.

Market Risk Premium

The market risk premium (Rm – Rf) is in effect the reward sought by investors for accepting a higher level of risk associated with the market in general. For the purpose of these calculations, William Buck has selected a market risk premium in relation to the Chinese market in the range of 6.9% to 8.2%, based on China's credit rating and credit default spreads.

Entity Size Premium

The comparable companies which were considered in determining the adopted equity beta are listed entities and have larger and more diverse operations than TBG. There have been studies which indicate that smaller entities should be expected to have higher expected returns because they have a higher risk.

Accordingly, we are of the view that a risk premium in the range of 6% to 10% is appropriate to take into account the additional size risk associated with TBG based on the Ibbotson SBBI 2015 Valuation Yearbook.

Entity Specific Risk Premium

The TBG Forecasts assume significant levels of new product development and commercialisation. Consequently, we consider that there is an inherent degree of uncertainty regarding the outcomes of each new product development and therefore a degree of risk that the forecast cash flows may not be achieved. In order to address this risk we have added an entity specific risk premium in the range of 5% to 7.5% to the cost of equity.

13.6 Appendix F – TBG Comparable companies analysis

Details of the comparable listed companies selected for the purpose of deriving a WACC for valuation of TBG are outlined below.

Company Name	Quote Symbol	Business Description	Market Cap 30 June 2015 AUD $mil	5 Year Beta
Affymetrix Inc.	NasdaqGS:AFFX	Affymetrix, Inc. provides life science products and molecular diagnostic products that enable parallel analysis of biological systems at the gene, protein, and cell level primarily in the United States, Europe, Latin America, and Asia. The company operates in two segments, Affymetrix Core and eBioscience. The company sells its products directly and through third party distributors to genomic research centers, academic institutions, government, and private laboratories, as well as pharmaceutical, diagnostic, and biotechnology companies. It has collaboration agreement with Cytox Ltd. The company was founded in 1991 and is headquartered in Santa Clara, California.	1,097	0.65
bioMérieux SA	ENXTPA:BIM	bioMérieux S.A. provides in vitro diagnostics solutions that determine the source of disease and contamination to enhance patient health and consumer safety worldwide. The company offers reagents, instruments, and software for diagnosing infectious diseases, healthcare-associated infections, antimicrobial resistance, sepsis, acquired immunodeficiency syndrome, hepatitis, acute care and cardiovascular emergencies, and cancer; and for detecting microorganisms in agri-food, pharmaceutical, biotechnology, and cosmetic products. The company, formerly known as B-D Mérieux, was founded in 1963 and is headquartered in Marcy l'Etoile, France. bioMérieux SA operates as a subsidiary of Institut Mérieux SA.	5,450	0.22
BPH Energy Limited	ASX:BPH	BPH Energy Limited, together with its subsidiaries, primary engages in developing biomedical research and technologies in Australia. It is involved in developing diagnostic array systems for the molecular diagnostics of infectious diseases; HLS5 tumour suppress gene; anaesthesia monitoring system for use during major surgery; and BacTrak, a diagnostic tool that enable pathology laboratories and the emergency departments of hospitals to provide patients identification of disease causing bacteria from a single sputum sample. BPH Energy Limited, formerly known as BioPharmica Limited, was founded in 2004 and is based in North Perth, Australia.	2	0.42
Exiqon A/S	CPSE:EXQ	Exiqon A/S provides life science research products worldwide. It operates through two segments, Life Sciences and Diagnostics. The company's products serve as a platform for the development of molecular diagnostic tests. It develops molecular diagnostic tests in collaboration with pharmaceutical and diagnostic companies. The company markets its research products through direct sales, distributors, and the Web. Exiqon A/S was founded in 1995 and is headquartered in Vedbæk, Denmark.	103	0.61
Genetic Signatures Limited	ASX:GSS	Genetic Signatures Limited, a specialist molecular diagnostics company, develops and commercializes PCR based kits for the detection of infectious diseases in Australia. The company provides EasyScreen pathogen detection kits that are based on its 3Base proprietary platform technology, which facilitate high-volume hospitals and pathology laboratories in the detection and identification of a range of infectious agents, such as enteric bacteria, enteric protozoans, enteric viruses, and C. difficile. It also offers EasyScreen sample processing kits that are used in the preparation of nucleic acids from the primary specimen. In addition, the company is developing a range of assays for the detection of respiratory virus and bacteria, MRSA, viral and bacterial meningitis, tuberculosis, and sexually transmitted infections. Genetic Signatures Limited was founded in 2001 and is based in Darlinghurst, Australia.	57	-
Illumina Inc.	NasdaqGS:ILMN	Illumina, Inc. provides sequencing and array-based solutions for genetic analysis in North America, Europe, Latin America, the Asia-Pacific, the Middle East, and South Africa. The company's products include sequencing platforms that are based on its SBS technology, which provides researchers with various ranges of applications and the ability to sequence mammalian genomes; and array platforms consist of HiScan and iScan systems, as well as NextSeq 550 system that are array scanners for DNA and RNA analysis applications, including single nucleotide polymorphism genotyping, copy number variations analysis, gene expression analysis, and methylation analysis. It also offers various library preparation and sequencing kits to simplify workflows and accelerate analysis. In addition, the company provides genotyping, noninvasive prenatal test, and whole-genome sequencing services. It serves genomic research centers, academic institutions, government laboratories, hospitals, and reference laboratories, as well as pharmaceutical, biotechnology, agrigenomics, commercial molecular diagnostic, and consumer genomics companies. The company sells its products directly, as well as through distributors. Illumina, Inc. was founded in 1998 and is headquartered in San Diego, California.	40,885	1.02
Inno-Gene S.A.	WSE:IGN	Inno-Gene S.A. operates a DNA research center that engages in genetic diagnostics, and research and development activities. The company provides services in the field of genetic medical diagnosis, including microbiological diagnosis of infection and the suitability of human congenital diseases in tests performed using DNA microarray technology, which allows the detection of tens to hundreds of mutations in the genes responsible for predisposition and development of breast and ovarian cancer, cystic fibrosis, and various eye and hearing diseases. It also performs research in determining parentage, paternity, and forensic research for justice and individual clients, as well as provides services in the field of genetic analysis to other companies and institutions. In addition, the company sells products for molecular diagnostics of human diseases. Further, it produces and distributes kits and diagnostic reagents, materials, and laboratory equipment for research in the field of molecular genetics. Inno-Gene S.A. is based in Poznań, Poland.	17	2.15
Luminex Corporation	NasdaqGS:LMNX	Luminex Corporation develops, manufactures, and sells proprietary biological testing technologies and products for the diagnostics and life sciences industries worldwide. It offers xMAP technology, an open architecture, multiplexing technology that allows simultaneous analysis of approximately 500 bioassays from a drop of fluid by reading biological tests on the surface of microscopic polystyrene beads called microspheres; and MultiCode technology used for real-time polymerase chain reaction (PCR) and multiplexed PCR assays. It serves pharmaceutical companies, clinical laboratories, and research and medical institutions. Luminex Corporation was founded in 1995 and is headquartered in Austin, Texas.	967	0.34
Medical & Biological Laboratories Co., Ltd.	JASDAQ:4557	Medical & Biological Laboratories Co., Ltd. researches, develops, manufactures, and sells a range of in vitro diagnostics (IVDs) and research reagents worldwide. It offers IVDs for autoimmune diseases, cancers, genetic diseases, infectious diseases, and allergies; gene mutation detection kit, and human leukocyte antigen and human platelet antigen DNA typing reagents; and tumor markers for multiple myeloma and urothelial carcinoma, as well as measures tumor-related autoantibodies. It offers in vitro diagnostics to hospitals and clinical testing centers; and research reagents to pharmaceutical and biological companies, research facilities, and universities. Medical & Biological Laboratories Co., Ltd. was founded in 1969 and is headquartered in Nagoya, Japan.	140	1.19
MetaStat, Inc.	OTCPK:MTST.D	MetaStat, Inc., a molecular diagnostic company, focuses on developing and commercializing epigenetic-based diagnostic tests for the prediction of systemic metastasis. The company's MetaSite Breast and MenaCalc diagnostic product candidates are designed to stratify patients based on their individual risk of metastasis and to allow oncologists to customize cancer treatment decisions by identifying patients with high-risk of metastasis who need aggressive therapy and by sparing patients with low-risk of metastasis from the harmful side effects and expense of chemotherapy. Its MetaSite Breast test is applicable for early stage breast cancer patients; and MenaCalc test is a platform applicable to various epithelial-based cancers, including breast, prostate, lung, and colorectal. Metastat, Inc. is based in Boston, Massachusetts.	11	0.05
Neogenomics Inc.	NasdaqCM:NEO	NeoGenomics, Inc., together with its subsidiary, NeoGenomics Laboratories, Inc., operates a network of cancer-focused testing laboratories providing genetic and molecular testing services to hospitals, pathologists, oncologists, urologists, other clinicians and researchers, and other laboratories in the United States. The company was founded in 2001 and is headquartered in Fort Myers, Florida.	424	1.03
Pacific Biosciences of California, Inc.	NasdaqGS:PACB	Pacific Biosciences of California, Inc. designs, develops, manufactures, and markets an integrated platform for genetic analysis. The company provides single molecule real-time (SMRT) technology platform, which enables single molecule real-time detection of biological processes. It offers PacBio RS II high resolution genetic analyzer, an instrument that conducts, monitors, and analyzes single molecule biochemical reactions in real time. The company provides consumable products, which include sealed and packaged SMRT Cells, as well as various reagent kits, such as template preparation kits, binding kits, and sequencing kits to run the PacBio RS II. Its customers include research institutions, commercial laboratories, genome centers, clinical, government and academic institutions, genomics service providers, pharmaceutical companies, and agricultural companies. The company markets its products through a direct sales force in North America and Europe as well as primarily through distributors in Asia. The company was as was founded in 2000 and is headquartered in Menlo Park, California.	558	2.37
PerkinElmer Inc.	NYSE:PKI	PerkinElmer Inc. provides products, services, and solutions to the diagnostics, research, environmental, industrial, and laboratory services markets worldwide. The company operates through two segments, Human Health and Environmental Health. The Human Health segment develops diagnostics, tools, and applications to help detect diseases earlier, and to accelerate the discovery and development of critical new therapies. It provides early detection for genetic disorders from pregnancy to early childhood, well as flat panel X-ray detectors and infectious disease testing for the diagnostics market; and a suite of solutions, including reagents, liquid handling systems, and detection and imaging technologies that enable scientists to enhance life sciences research and drug discovery processes. The company serves pharmaceutical and biotechnology companies, laboratories, academic and research institutions, public health authorities, private healthcare organizations, doctors, and government agencies. PerkinElmer Inc. was formerly known as EG&G, Inc. and changed its name to PerkinElmer, Inc. in October, 1999. The company was founded in 1931 and is headquartered in Waltham, Massachusetts.	7,742	0.93
Precision System Science Co., Ltd.	JASDAQ:7707	Precision System Science Co., Ltd. develops, manufactures, and sells automated systems/instruments, other physicochemical instruments, software, and other products. The company's products include automated nucleic acid isolation systems, microarray sample preparation systems, customized/OEM products, magnetic beads based multi-purpose/open-platform systems, and protein purification systems. The company was founded in 1985 and is headquartered in Matsudo, Japan.	178	1.66
Qiagen NV	NasdaqGS:QGEN	QIAGEN N.V. provides sample to insight solutions that transform biological samples into valuable molecular insights worldwide. It offers sample technologies to isolate, purify, and stabilize nucleic acids and proteins in plasmid deoxyribonucleic acid (DNA) purification, ribonucleic acid purification and stabilization, genomic and viral nucleic acid purification, DNA cleanup after polymerase chain reaction (PCR) and sequencing, and library preparation for sequencing applications; and assay technologies to detect molecular targets. The company serves molecular diagnostics, applied testing, pharma, and academia customers. It has collaboration agreement with Astellas Pharma Inc., AstraZeneca PLC, Eli Lilly and Company, Exosome Diagnostics Inc., and Novartis AG. QIAGEN N.V. was founded in 1986 and is headquartered in Venlo, the Netherlands.	7,474	0.94
Sequenom Inc.	NasdaqGS:SQNM	Sequenom, Inc., a life sciences company, develops and commercializes molecular diagnostics testing services for the women's health and oncology markets in the United States and internationally. The company serves physicians and client laboratories. It has collaboration with the Seoul National University Hospital. The company was founded in 1994 and is headquartered in San Diego, California.	466	0.80
Thermo Fisher Scientific, Inc.	NYSE:TMO	Thermo Fisher Scientific Inc. provides analytical instruments, equipment, reagents and consumables, software, and services for research, manufacturing, analysis, discovery, and diagnostics worldwide. The company's Life Sciences Solutions segment offers reagents, instruments, and consumables used in biological and medical research, discovery, and production of new drugs and vaccines, as well as diagnosis of diseases. This segment serves pharmaceutical, biotechnology, agricultural, clinical, academic, and government markets. Thermo Fisher Scientific Inc. was founded in 1956 and is headquartered in Waltham, Massachusetts.	67,114	1.06
Transgenomic Inc.	NasdaqCM:TBIO	Transgenomic, Inc., a biotechnology company, engages in advancing personalized medicine in the detection and treatment of cancer and inherited diseases through its proprietary molecular technologies and clinical and research services in the United States and internationally. It operates in two segments, Laboratory Services, and Genetic Assays and Platforms. The company was founded in 1997 and is headquartered in Omaha, Nebraska.	26	0.05

Source: S&P Capital IQ

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