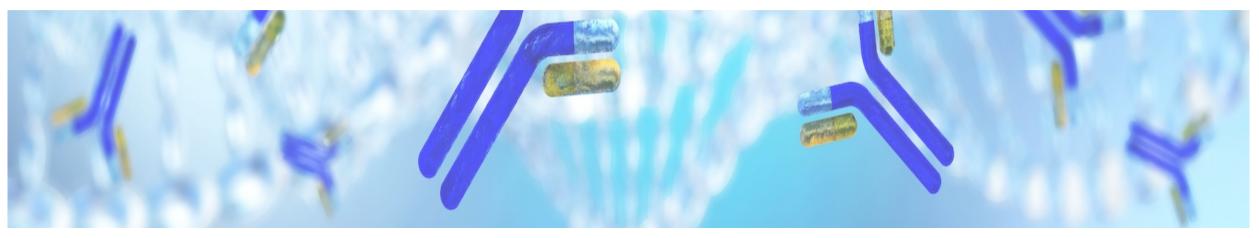


# patry/s

#### **INVESTOR PRESENTATION**

November 2020



#### Safe harbour statement

The following material is for general information purposes only and is not to be relied upon for the making of an investment decision. Any investment in Patrys Limited ACN 123 055 363 (Patrys) is subject to investment risk including the possibility of loss of capital invested and no return of income or payment of dividends. Neither Patrys nor any other entity or person in or associated with the Patrys group of companies guarantees any return (whether capital or income) or generally the performance of Patrys or the price at which its securities may trade.

In particular, this presentation is not a recommendation, offer or invitation to subscribe for or purchase Patrys securities. It is not for general distribution or third party reliance or use. While it has been prepared from sources Patrys believe to be reliable, Patrys cannot guarantee its accuracy or completeness and undertakes no obligation to advise of changes or updates to any such materials.

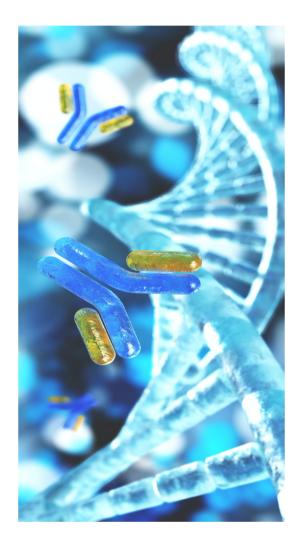
These materials are not exhaustive of all of the information a potential investor or their professional adviser would require. Nor do these materials take into account any specific objectives, financial situation or needs of investors. In addition, the past performance of Patrys cannot be assumed as indicative of the future performance of the company. For these and other reasons, before making any investment decision regarding Patrys securities you are strongly recommended to obtain your own up to date independent legal, financial and investment advice – those acting without such advice do so at their own risk.

Where this presentation does contain any forward looking statements, those statements are only made as the date of the presentation and are to be considered "at-risk statements" not to be relied upon as they are subject to further research and to known and unknown risks, uncertainties and other factors that may lead to actual results differing from any forward looking statement. This is particularly the case with companies such as Patrys which operate in the field of researching, discovering, developing, and commercialising potential drugs intended for safe and effective for human treatments or therapies.



#### Investment summary

- Deoxymabs are the first antibody platform able to naturally enter cells and target DNA damage repair (DDR)
- Recent transactions in cancer drugs targeting DDR, and sales of PARP inhibitors (2019/20 sales >US\$1.5 bn) highlight the commercial attractiveness of this space
- Patrys has exclusive, worldwide rights for the use of deoxymabs in cancer and has created humanised versions of the antibodies for therapeutic development
- Preclinical studies have shown that deoxymabs have therapeutic potential as single agents, and in combination with chemo and radiation therapies, supporting clinical development
- Preclinical studies have shown that Deoxymabs can cross the blood-brain barrier, opening up the possibility of using Deoxymabs to treat primary and secondary brain cancers
- Post completion of the proposed capital raising, the company is funded to complete manufacture, the remaining preclinical studies, and initiate first-in-man studies





### Company snapshot

Shares 1.44B

Market cap A\$30.2M

Cash <sup>1</sup> A\$7.0M

Last qtr burn <sup>1</sup> (A\$0.8M)

Headquarters Melbourne

Board John Read(Chair)

James Campbell (CEO & MD)

Pamela Klein (NED)

Suzy Jones (NED)

Michael Stork (NED)

Substantial Dr Dax Marcus Calder – 12.1%

Stork Holdings – 6.9%

Mason Stevens – 5.2%



price <sup>2</sup> \$0.021 12mth high - low \$0.029 - \$0.011 av. daily volume 10,900,000



<sup>&</sup>lt;sup>1</sup> quarter ending 30 Sep 2020

<sup>&</sup>lt;sup>2</sup> as at close of trade, 4 Nov 2020

#### **Board of Directors**



#### John Read Chairman

- Experienced Chairman and Director in public, private and government organisations
- Extensive career in venture capital, private equity and commercialisation
- Chairman of CVC Limited (ASX: CVC),
   previously Eildon Capital Limited (ASX:EDC)



#### **Dr James Campbell**

- >20 years of international biotechnology research, management and leadership
- Previously the CFO and COO of ChemGenex Pharmaceuticals Limited (ASX:CXS) and of Evolve Biosystems Inc.



#### Dr Pamela M. Klein

- Former VP, Development at Genentech, led development of a large portfolio of drugs
- Chief Medical Officer of Intellikine (acquired by Millennium/Takeda)
- Board member at Argenx (Euronext & Nasdaq: ARGX)



#### **Suzy Jones**

- Founder and Managing Partner of DNA Ink, a life sciences advisory firm in San Francisco
- 20 years at Genentech in BD, product development and immunology research
- Board member at Calithera (Nasdaq: CALA)



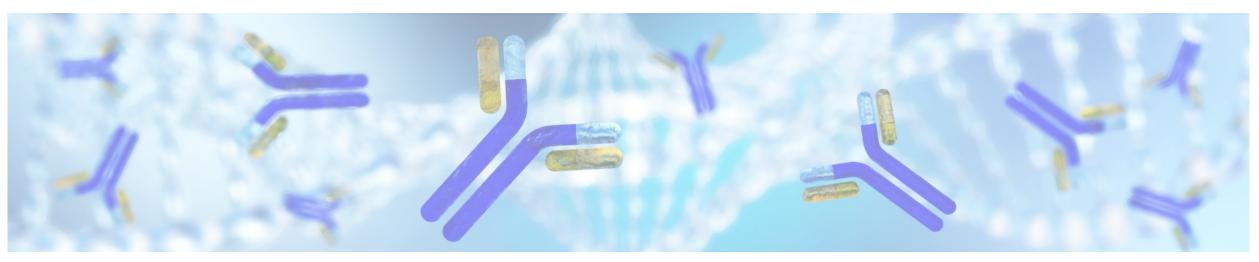
#### **Mike Stork**

- Managing Director of Stork Holdings Ltd, active in Canadian technology start-up sector
- Director of a number of leading Canadian technology start-up companies





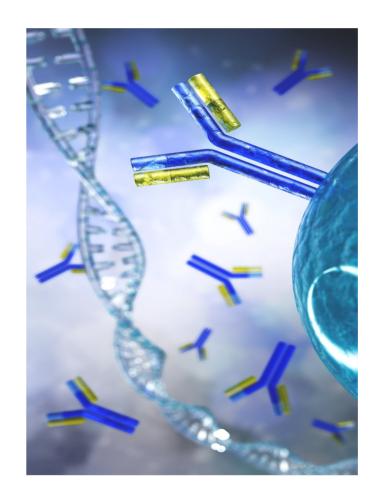
## **Technology Overview**



## First anticancer antibody therapeutic targeting DDR

- Patients with systemic lupus erythematosis (SLE) generate antibodies against antigens from their own tissues and cells
- An antibody which binds to DNA, 3E10, was isolated from a mouse model of SLE
- 3E10 has a unique combination of properties that has not been seen in other antibodies, including those isolated from SLE patients:
  - Tumors release DNA which attracts deoxymabs
  - Deoxymabs penetrate into cells and the cell nucleus
  - Block DNA damage repair (DDR) systems within the nucleus
  - Can cross the blood-brain barrier (BBB)
- Preclinical studies show deoxymabs appear to be safe, with very little effect on normal, healthy cells
- Previous phase 1 clinical trial of 3E10 in 9 SLE patients showed no safety issues<sup>1</sup>

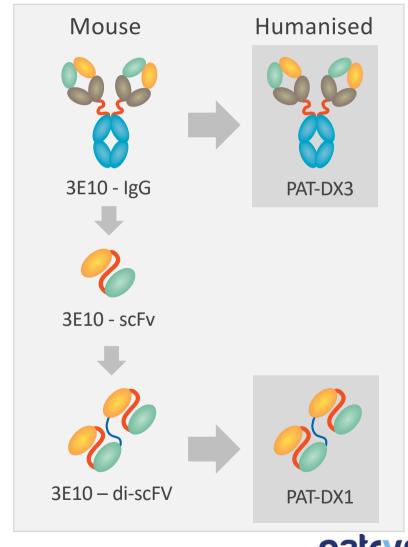
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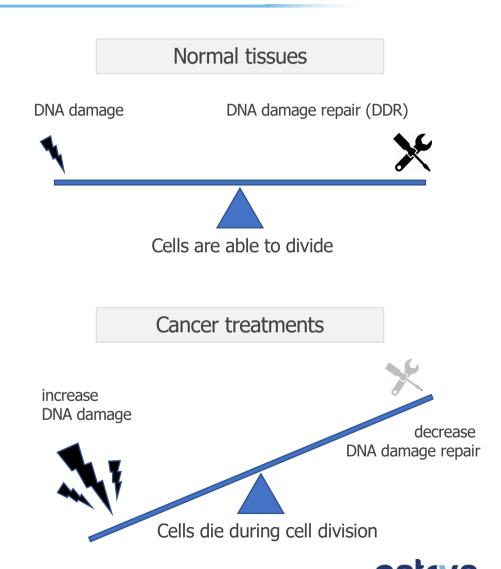
#### Patrys' deoxymab platform

- Patrys' deoxymab platform is based on humanised versions of the mouse
   3E10 antibodies
- Global rights to 3E10 antibodies for the treatment of cancer were acquired in 2016
- Patrys has created humanised versions of the 3E10 antibodies for therapeutic development:
  - **PAT-DX1**: two copies of a humanised binding domain of 3E10
  - **PAT-DX3**: a humanised version of the full IgG 3E10 mouse antibody
- PAT-DX1 and PAT-DX3 are likely to have different pharmaceutical properties, enabling their use for a wide range of healthcare applications
- Manufacturing and formulation program is underway



### Targeting DNA damage is effective for treating cancer

- Low-level damage occurs to DNA normally, but is usually fixed by DNA damage repair (DDR) systems
- Many current cancer treatments exploit the vulnerability cancer cells have from damage to their DNA
- Many cancer therapies increase the level of DNA damage by:
  - **Increasing the amount of DNA damage**; overloading the system (radiation and many chemo drugs)
  - Blocking DNA damage repair systems; decreasing the repair capacity (PARP inhibitors)
- Cells with damaged DNA usually die during cell division
- Cancer cells divide rapidly, making them more vulnerable to therapies that increase levels of DNA damage



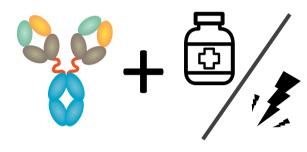
### Deoxymab platform offers multiple therapeutic approaches

Single Agent



- Many cancers have pre-existing defects in their DNA damage repair (DDR) systems
- Additional blocking of DDR by deoxymabs can increase the amount of DNA damage to a level where it is lethal
- This additive approach is called "synthetic lethality"

**Combination Therapies** 



- DNA damage can be increased by combining deoxymabs with existing DNAdamaging therapies
- Radiation therapy and many chemo drugs work by causing damage to DNA
- Deoxymabs can slow the repair of the damage caused by these agents by blocking the DDR systems

**Targeted Therapies** 



- Deoxymabs can direct delivery of toxic payloads to cancer cells and the cell nucleus
- Tumors release DNA which attracts deoxymabs that then enter the cancer cells
- Deoxymabs can target toxic payloads to the cell nucleus, killing the cancer cell

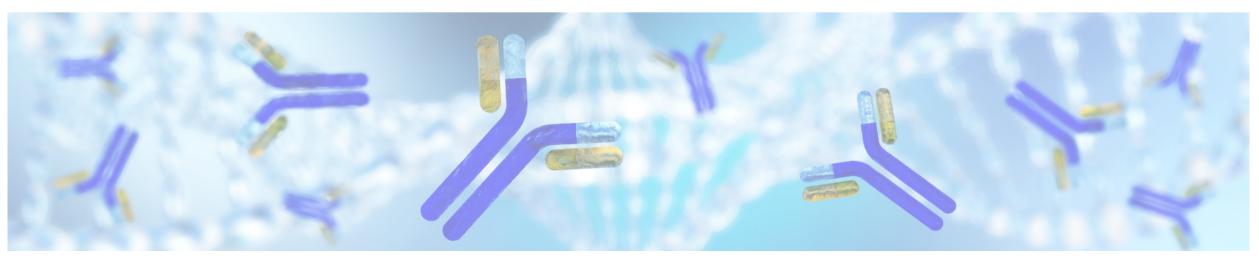
All of these approaches for using deoxymabs have been successfully demonstrated in preclinical studies





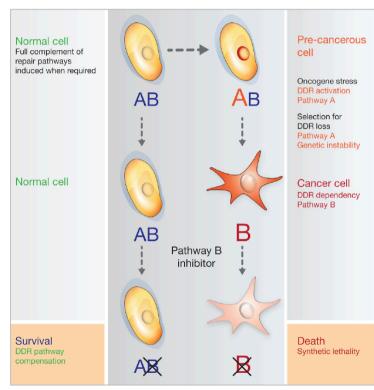


## Deoxymab programs



## Single agent – synthetic lethality is a proven approach

- Many cancer cells have defects in their DNA damage repair (DDR) systems
- Redundancy means that these cancer cells usually can divide and survive, despite these defects
- Further blocking the DDR systems with drugs can result in a build-up of DNA damage that becomes lethal when the cells attempt to divide
- This additive approach, called "synthetic lethality", has been effective with anticancer drugs called PARP-inhibitors<sup>1</sup>:
  - Treatment with PARP-inhibitors can significantly increase progressionfree survival
  - 4 FDA approved drugs with combined sales of >US\$1.5 billion in 2019/20, forecast growth rates of >25% pa



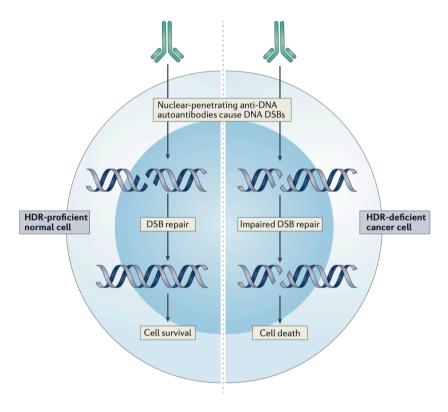
SOURCE: Molecular Cell 60: (2015)



### Single agent – deoxymabs offer new options

- Patrys' deoxymab platform provides an antibody option for generating synthetic lethality to treat cancer
- The potential benefits of using deoxymab antibodies for synthetic lethality include:
  - Cancer targeting: attracted to the DNA released from tumors
  - Multiple modes of action: block multiple DDR systems
  - Wider therapeutic window: better side-effect profile
  - Cross the blood-brain barrier: allowing treatment of brain cancers
- Patrys intends to initially trial Deoxymabs for use in patients with primary brain cancer (glioblastoma) and other solid tumours with CNS metastases

#### Synthetic Lethality With Deoxymabs



**SOURCE**: Nature Reviews Rheumatology **12**: 429-434 (2016)

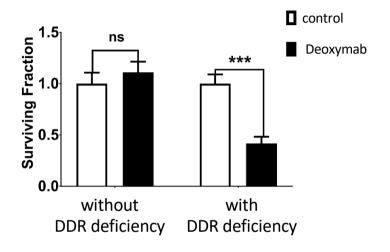


## Single agent – deoxymabs for treatment of glioblastoma

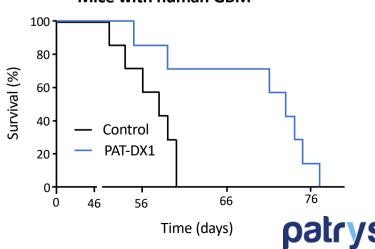
- Glioblastoma (GBM) is the most common form of primary brain cancer, with approximately 23,000 new cases diagnosed in the US each year
- GBM is highly aggressive with few effective treatment options (5-year survival rate = 5.6%)
- First line therapy for GBM is surgical removal of the tumour followed by radiation. Temozolomide (Temodar®) improves survival by 2 months
- $\sim$  40% of GBM tumors have a mutation in a protein call PTEN which is involved in the repair of DNA damage
- In GBM cells, single agent PAT-DX1:
  - has no impact on survival in cells with an intact PTEN protein
  - significantly decreases survival in cells with a PTEN mutation (DDR deficiency)
- In an animal model using human GBM explants, single agent PAT-DX1 improved survival by 26%

#### deoxymab

#### Glioblastoma cells



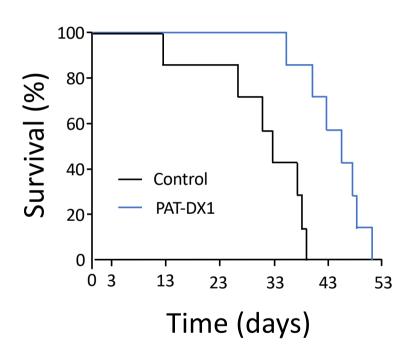
#### Mice with human GBM



### Single agent – deoxymabs for breast cancer metastases

- Approximately 230,000 women are diagnosed with breast cancer in the US each year
- 10%-15% have Triple Negative Breast Cancer (TNBC), an aggressive form with deficiencies in the BRCA1 gene (DNA damage repair)
- ~50% of TNBC patients develop brain metastases
- Like glioblastoma, TNBC brain metastases are very difficult to treat and patients usually have poor outcomes
- Mice with TNBC metastases treated with PAT-DX1 as a single agent, had 93% less brain metastases than control animals after 28 days
- This resulted in a 37% survival benefit

#### TNBC <sup>1</sup> Brain Metastases Model

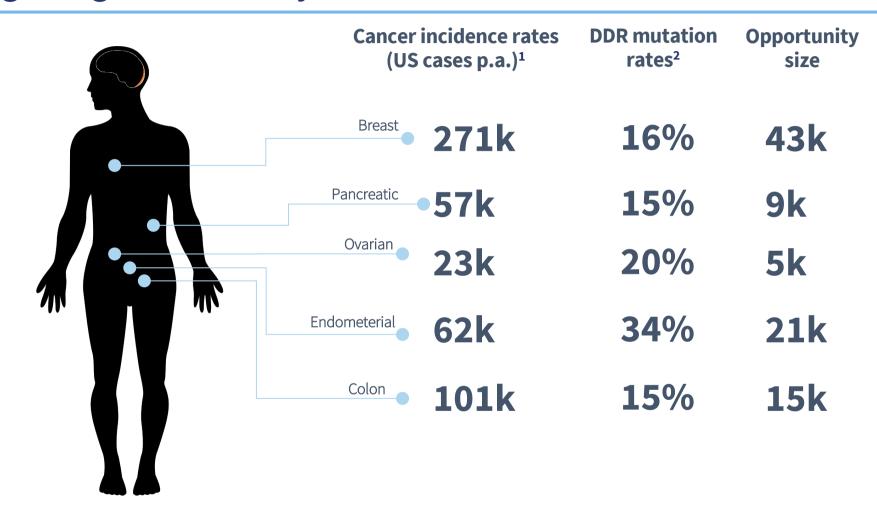


<sup>&</sup>lt;sup>1</sup> TNBC = triple negative breast cancer which has DDR deficiency





#### Single agent – many solid tumors have DDR mutations



American Cancer Society - Cancer Facts & Figures 2019

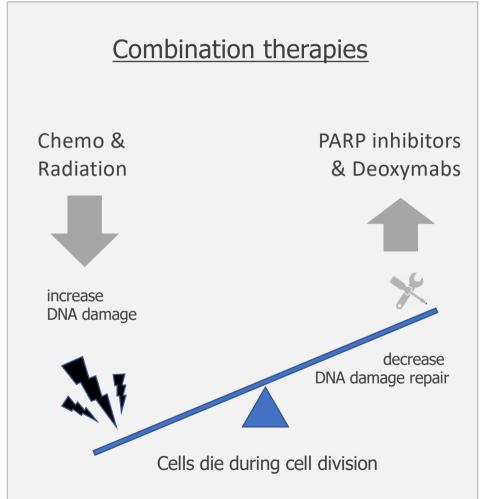
Heeke et al. 2018. Prevalence of Homologous Recombination—Related Gene Mutations Across Multiple Cancer Types. JCO Precis Oncol. 2018; 2018: 10.1200/PO.17.00286.





## Combination therapies – doubling down on DNA damage

- Deoxymabs can be combined with radiation or chemotherapy drugs to increase the levels of DNA damage:
  - Radiation/chemo: damage DNA in cancer cells
  - **Deoxymabs**: reduce ability of cancer cells to repair DNA damage
- Combinations aim to enhance the therapeutic windows of radiation or chemotherapies:
  - Same efficacy: but with a lower dose (lower side effects)
  - **Greater efficacy:** from the same dose of radiation or chemo
- PARP inhibitors have been used in combination with radiotherapy, but combining them with chemo drugs has been less successful:
  - Narrow therapeutic window limiting dose reduction
  - High incidence of myelosuppressive side effects
  - Potential combination partners limited by targeted MoA



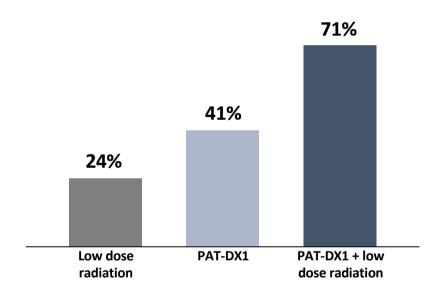




## Combination therapies – improving glioblastoma treatments

- Radiation is a mainstay treatment for glioblastoma (GBM) patients and is used:
  - as a monotherapy (less frequently)
  - post-surgical removal of tumour tissue
  - in combination with the drug temozolomide (Temodar®)
- The efficacy of radiation therapy is dose-dependent, which is limited by potential side-effects:
  - risk of damage to adjacent healthy brain tissue
  - tiredness, weakness, loss of hair, nausea
  - worsening of brain cancer symptoms
- PAT-DX1 can improve the efficacy of low-dose radiation in a preclinical model of aggressive GBM
- PARP-inhibitors have had limited success in GBM due to their inability to cross the blood-brain barrier

Radiation + Deoxymabs improve survival



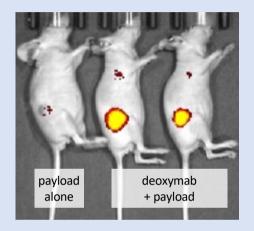
Human glioblastoma cells implanted in mice. Seven mice were in each of four groups: 1. control, 2. radiation alone, 3. PAT-DX1 alone, 4. radiation + PAT-DX1. The bars represent improvement in survival over the control group at day 28.





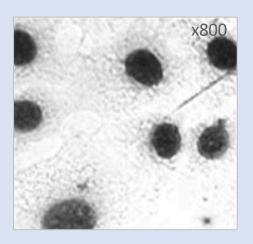
## Targeted therapies – Deoxymabs provide new opportunities

#### **Cancer Targeting**



- Deoxymabs are attracted to the DNA released from tumors
- This "cancer seeking" activity can be used to deliver drugs to tumors and metastases anywhere in the body
- As DNA is released by all tumors, it is a pan-cancer antigen that attracts deoxymabs

#### **Nucleus Targeting**



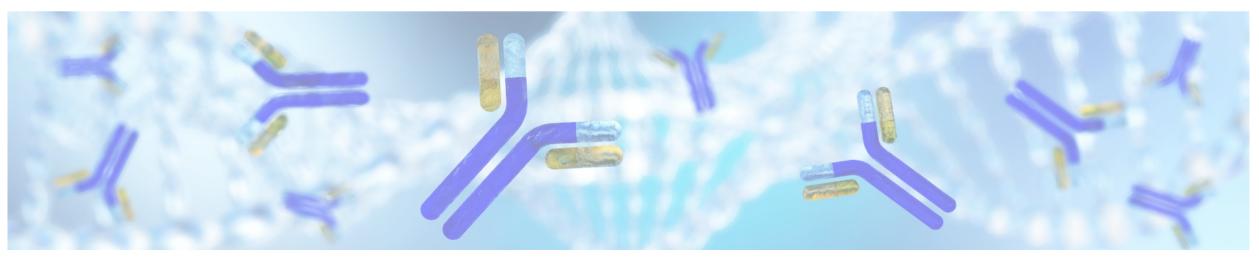
- Deoxymabs are able to enter the cell and penetrate into the nucleus
- This allows the targeted delivery of therapeutics into the cell nucleus
- This approach has been demonstrated by the delivering of a nuclear protein to correct a mutation



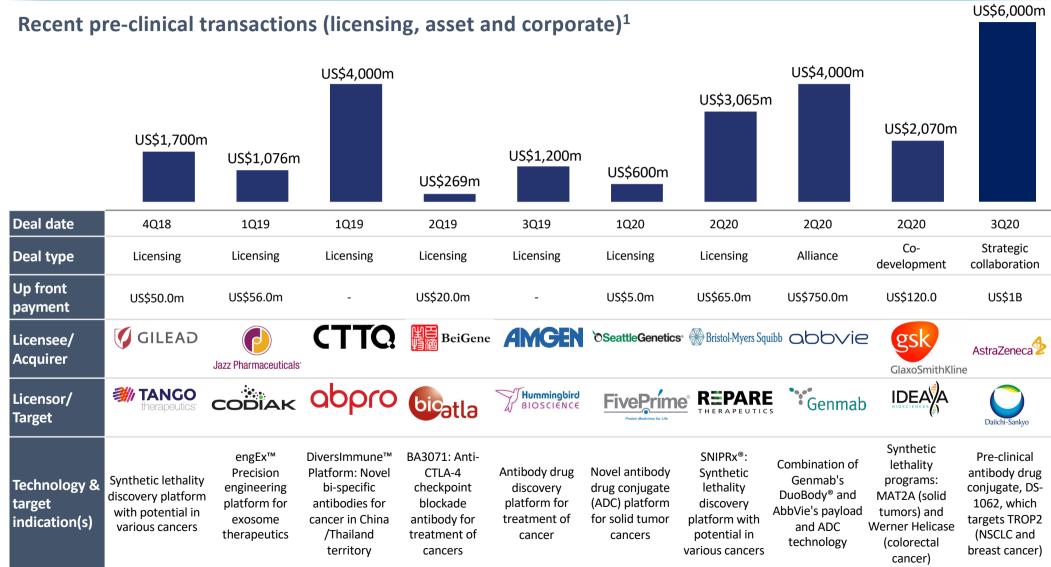




## Commercial landscape



## Recent deals for antibody and synthetic lethality assets



Source: Company information

All deal values exclude potential royalty payments

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## DDR assets attracting commercial interest

#### **ENDPOINTS** NEWS

June 16, 2020 07:07 AM EDT Updated 07:28 AM Deals



## Billions on the table, GSK's Hal Barron antes \$120M cash to partner with a specialist in synthetic lethality



GSK R&D chief Hal Barron has turned to another Bay Area biotech for his latest oncology drug development pact, which could total billions for a preclinical deal that starts with \$120 million in cash. And this one speaks directly to one of his favorite topics: synthetic lethality.

Barron is partnering with Ideaya Biosciences \$IDYA for this new alliance. GSK is handing over \$100 million in upfront cash, plus another \$20 million for a chunk of stock.

Then there's around \$940 million to \$960 million in combined development and regulatory milestones for each product to successfully emerge onto the market, according to the biotech's SEC filing.

May 27, 2020 06:28 AM EDT Updated 07:08 AM Deals

e in y

#### In latest cancer deal, Bristol Myers Squibb's new BD chief bets \$65M in search for more targets like PARP



Amber Tong

Editor

Elizabeth Mily, the new chief of the strategy and business development group at Bristol Myers Squibb, has struck her first high-profile collaboration since succeeding Paul Biondi. In putting down \$65 million upfront, she's also signaling where the pharma giant — with a newly-consolidated pipeline featuring a slate of oncology and hematology drugs from Celgene — is headed for the next wave of cancer therapies.

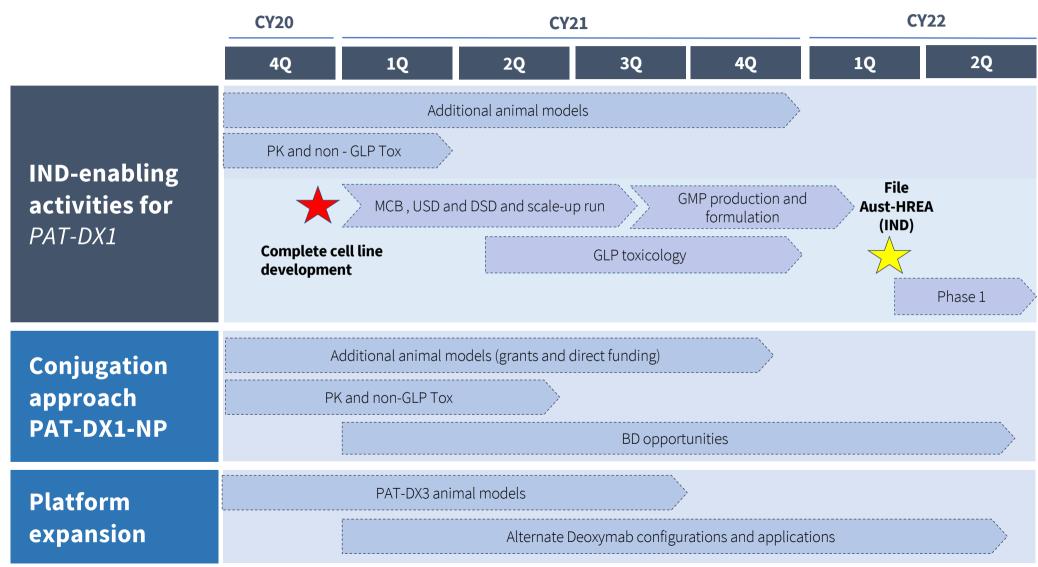


Synthetic lethality is the theme at Versant-backed Repare Therapeutics, which is getting \$50 million in cash and \$15 million in equity investment to discover new targets for Bristol. Its own clinical and near-clinical programs will remain independent, CEO Lloyd Segal said.

"This collaboration will help to ensure that our novel discoveries are being broadly prosecuted in the search for the next generation of precision oncology medicines," he added.



#### **Timeline**



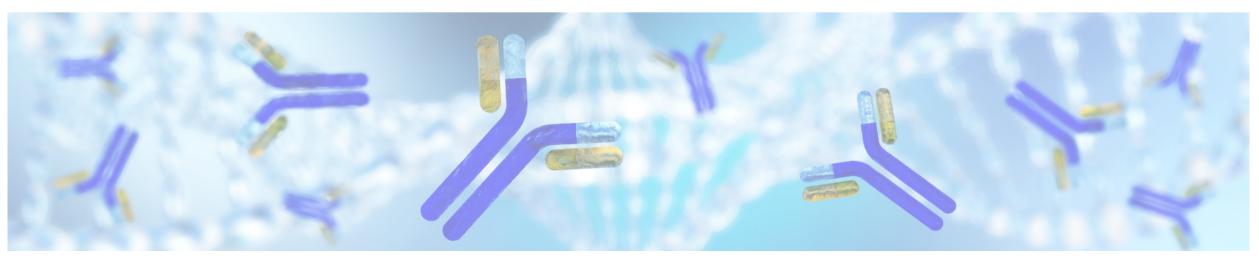
## Anticipated newsflow / Milestones

PAT-DX1 stable cell line development completed	Q4 2020
PAT-DX1 & PAT-DX3 comparative animal studies initiated	Q4 2020
PAT-DX1 non-GLP toxicology and pharmacokinetic studies completed	Q1 2021
PAT-DX1 master call bank completed	Q2 2021
PAT-DX3 pre-clinical studies initiated	H1 2021
PAT-DX1 GLP toxicology studies initiated	Q2 2021
PAT-DX1 GMP production and formulation program initiated	H2 2021
PAT-DX1 IND (as Australian Human Research Ethics Application) submitted	Q1 2022
PAT-DX1 Phase 1 clinical study initiated	H1 2022
Expansion of Deoxymab platform (nanoparticles, ADCs, bispecific antibodies)	Ongoing
Scientific publications	Ongoing
New IP filings and patent grants	Ongoing
Alliances, collaborations and grants	Ongoing
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## Risk factors



### **Key Risks**

Investment in the Company involves risks that may be higher than the risks associated with an investment in other companies. Securities in the Company carry no guarantee with respect to the payment of dividends, returns of capital or the market value of the securities.

Before deciding to invest in the Company, you should refer to announcements made by the Company to the ASX to ensure you understand the operations of the Company and appreciate the risks involved with investing in the Company. Further, you should consider the investment in the context of your individual risk profile for speculative investments, investment objectives and individual financial circumstances.

Nothing in this presentation is financial product advice and this document has been prepared without taking into account your investment objectives or personal circumstances.

The business, assets and operations of the Company are subject to certain risk factors that have the potential to influence the operating and financial performance of the Company in the future. These risks can impact on the value of an investment in the securities of the Company. There are also general risks associated with any investment in securities. Some of these specific and general risks are outside the control of the Company and are not capable of mitigation.

Accordingly, an investment in the Company should be regarded as speculative and investors should be in a position to bear the loss of their entire investment. Before deciding whether to invest in the Company potential investors should seek professional advice from their accountant, stockbroker, lawyer or other professional advisor.

Set out on the following pages are some Specific and General risks to which the Company is exposed. The risks described are not to be taken as exhaustive.



## Specific Risks - i

Innovative technological development

The Company's product range includes candidates that are in pre-clinical development and need to be further tested before they can progress to human clinical trials. Pre-clinical and clinical development of the Company's product candidates could take several years to complete, and might fail for a number of reasons including but not limited to lack of efficacy, failure to obtain regulatory approval, difficulty or failure to manufacture the Company's products on a large scale, or toxicity. There is no guarantee that Patrys' products will be commercially successful.

**Regulatory risks** 

The research, development, manufacture and sale of products deploying the Company's technology is subject to a number of regulations prescribed by government authorities in Australia and overseas. Generally, there is a high rate of failure for drug candidates proceeding through pre-clinical and clinical trials. Further, even if the Company views the results of a trial to be positive, the FDA or other regulatory authorities may disagree with the Company's interpretation of the data. Thus, any product deploying Patrys' technology may be shown to be unsafe, non-efficacious, difficult or impossible to manufacture on a large scale, uneconomical to market, compete with superior products marketed by third parties, fail to secure meaningful reimbursement approval, or not be as attractive as alternative treatments.

Dependence on service providers and third party collaborators

The Company relies upon independent third party service providers and third party collaborators including academic institutions to complete the development and commercialisation of its products. The Company therefore is exposed to the risk that any of these parties can experience problems related to operations, financial strength or other issues, which in turn could negatively impact the progress or success of the Company's product development efforts.

The COVID-19 pandemic creates particular risks and challenges for the Company, which outsources both research and manufacturing activities, as operational progress may be slowed or arrested as jurisdictions and suppliers respond to differing conditions.



## Specific Risks - ii

#### Reliance on key personnel

The responsibility of overseeing the day-to-day operations and the strategic management of the Company depends substantially on its senior management and its key personnel. There can be no assurance given that there will be no detrimental impact on the Company if one or more of these employees cease their employment.

### Intellectual Property

The Company's ability to leverage its innovation and expertise depends upon its ability to protect its intellectual property including maintaining patent protection for its product candidates and their respective targets. The Company owns, or has licensed issued and pending patent applications covering a range of antibodies, cell lines, molecular targets, potential drug candidates and platform technologies. The prospect of attaining patent protection for products such as those Patrys proposes to develop is highly uncertain and involves complex and continually evolving factual and legal questions. The Company may incur significant costs in prosecuting, or defending its intellectual property rights.

#### **Competition risk**

The biotechnology and bio-pharmaceutical sectors are highly competitive and subject to rapid and significant technology change. The development of therapeutics is very difficult and demanding; even more so if this competition is against competitors who may have larger resources than the Company. A number of companies, both in Australia and overseas, may be developing products that target similar markets that Patrys is targeting. Patrys may face competition from companies with superior technologies or greater resources. As a result, there is the risk that the Company may be beaten to the market by one or more competitors.



## Specific Risks - iii

#### **Currency risk**

Revenue and expenditure in overseas jurisdictions are subject to the risk of fluctuations in foreign exchange markets. The Company carries on part of its business outside of Australia and intends to continue to do so. Accordingly, revenues and payments will be made in those countries' currencies and may deviate from budgeted expectations if there are adverse currency fluctuations against the Australian dollar.

## Requirement to raise additional funding

The Company may be required to raise additional funds in the future. There is no guarantee that Patrys will be able to raise such additional capital when it is required, or on terms satisfactory to the Company. If the Company is unsuccessful in obtaining funding when required, this may have a material adverse effect on the Company's business and financial condition and performance and Patrys may need to delay, scale down or cease its operations. Further, any additional capital raised may dilute shareholders' interests in the Company.

## Risk of delay and continuity of operations

Patrys may experience delays in achieving some or all of its milestones, including but not limited to product development, completion of trials, obtaining regulatory approvals manufacturing delays, or delays in sales or out licensing. The Company is also dependent on amongst other things its technology, key personnel and IT systems. Any disruption or delay to any key inputs could impact adversely on the Company.

#### Insurance

The Company insures its business and operations. However, the Company's insurance may not be of a nature or level to provide adequate insurance cover to insure against the occurrence of all events that may impact on the operations of the Company. The occurrence of an event that is not covered or fully covered by insurance could have a material adverse effect on the business, financial conditions and results of the Company.



#### General Risks - i

#### **Market Conditions**

The stock market, and in particular, the market for biotech companies, has experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of such companies. These factors may materially affect the market price of the Company's securities, regardless of the Company's operational performance.

The price at which the Company's securities are quoted on ASX may increase or decrease due to a number of factors outside the Company's control and which are not explained by the fundamental operations and activities of the Company, including unpredictable influences on the market for securities in general and biotech stocks in particular. These factors may cause the Securities to trade at prices above or below the price at which the Company's securities were initially acquired. There is no assurance that the price of the Company's securities will increase if they are quoted on ASX. Some of the factors which may affect the price of the securities include:

- fluctuations in the domestic and international market for listed stocks
- general economic conditions in both Australia and internationally, including interest rates, inflation rates, exchange rates, commodity prices
- inclusion in or removal from market indices
- changes to government fiscal, monetary or regulatory policy, legislation or regulation
- the nature of competition in the markets and industries in which the Company operates
- the introduction of taxation reform
- general operational and business risks.



#### General Risks - ii

**Liquidity** There can be no guarantee that an active market in the Securities will develop or that the price of the

Securities will increase. There may be relatively few buyers or a relatively high number of sellers of Securities on ASX at any given time. This may increase the volatility of the market price of Securities. It

may also affect the market price at which Shareholders are able to sell their Securities.

**Force Majeure** Events may occur within or outside Australia that could affect investor sentiment or impact upon the

global and Australian economies, the operations of the Company and the price of the Securities. These events include acts of terrorism, an outbreak of international hostilities, fires, floods, earthquakes, labour strikes, civil wars, natural disasters, outbreaks of disease or other man-made or natural events. These

events can have an adverse effect on the demand for the Company's goods and services and its ability to

conduct business. The Company has only a limited ability to insure against some of these risks.

**Litigation risk** There is a risk that Patrys may in the future be the subject of or require to commence litigation,

mediation or arbitration. The impact of such actions may have a material adverse impact on the

Company.



#### General Risks - iii

#### **Taxation Risks**

Changes in tax law, or changes in the way tax laws are interpreted ,may impact the tax liabilities of the Company, Shareholder returns, or the tax treatment of a Shareholder's investment. In particular, both the level and basis of taxation may change. Tax law is frequently being changed, both prospectively and retrospectively. Any actual or alleged failure to comply with, or any change in the application or interpretation of tax rules applied in respect of such transactions, may increase the Company's tax liabilities or expose it to legal, regulatory or other actions.

## Changes in Accounting standards

Australian accounting standards are issued by the Australian Accounting Standards Board and are not within the control of the Company and its directors. Any changes to the accounting standards or to the interpretation of those standards may have an adverse effect on the reported financial performance and position of the Company.

#### COVID-19

At the time of issue of this Prospectus, the COVID-19 global pandemic is having a significant and material impact on global markets and providing substantial impingement on the day-to-day operations of businesses. The pandemic may disrupt or prevent the Company from undertaking its operations and intended programs and may impact the Company's ability to raise capital in the near to medium term future.



#### **CONTACT**

Dr. James Campbell **CEO** and Managing Director +61 3 9670 3273 info@patrys.com







## www.patrys.com

Patrys Limited (ASX:PAB)