ARGONAUT
The Natural Choice in Resources

EQUITY RESEARCH
Financial Advisers | Stockbroking & Research | Special Situations Financing
www.argonaut.com PERTH +61 8 9224 6888 HONG KONG +852 3557 4888

SPEC BUY

Current Price	$0.135
Target Price	$0.40

Shares on Issue (m):		181.5
Market Cap ($m):		24.5
Net Debt / (Cash) ($m):		-3.9
Enterprise Value ($m):		20.7
52 wk High/Low:	0.17	0.07
12m Av Daily Vol (m):		0.27

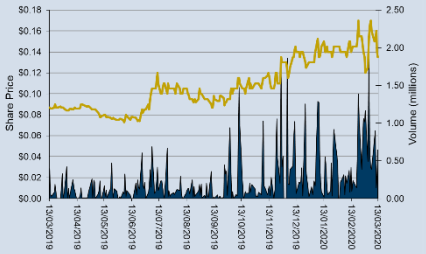
Risk adjusted valuation (NPVs):

DMX-200 FSGS	82.0
DMX-200 DKD	35.9
DMX-700	0.0
Less: Corporate Costs ($m)	-13.4
Add: Unpaid Capital ($m)	62.7
Total portfolio ($m)	167.2
Assumed dilution (%)	59%
Diluted Portfolio Value ($m)	68.4
Add: Current Cash ($m)	3.9
Valuation ($m)	**72.2**

Financials:

	4Q19A	1Q20A	2Q20A
Op CF ($m)	-1.0	-1.6	-0.5
Inv CF ($m)	-0.0	0.0	0.0
Fin CF ($m)	0.0	-1.6	1.9
Net CF ($m)	-1.0	-1.6	1.9
Cash ($m)	**3.6**	**2.0**	**3.8**

Share Price Graph



Please refer to important disclosures at end of the report (from page 17)

Monday, 16 March 2020

Dimerix (DXB)

Seeing Double – Two Kidney Drugs in the Clinic

Analyst | Michael Eidne

Quick Read

Dimerix (DXB) is a drug development company with a platform that can identify druggable receptor combinations to treat diseases. DXB has two indications in the clinic, a Phase 2 study testing a drug for diabetic kidney disease and a Phase 2a study targeting the rare kidney disease focal segmental glomerulosclerosis (FSGS) for which it has been awarded Orphan Drug Status in both U.S. and Europe. Readout of results is expected mid-year. We initiate with a SPEC BUY recommendation and a price target of $0.40 p/s.

Initiation Report

DMX has two indications in the clinic: DXB is developing DMX-200, which is a small molecule known as propagermanium for patients who are already receiving angiotensin receptor blockade. DMX-200 is being clinically tested on two different types of kidney disease, FSGS and diabetic kidney disease, which are in a phase 2a and a phase 2 study respectively. Readout for both studies is expected in the middle of the year.

Treating physicians have requested patients remain on DMX-200 upon completion of the study: The physicians taking part in the study have made requests to the Therapeutic Goods Administration (TGA) Special Access Scheme to allow patients to remain on DMX-200 when they complete the study. These requests have been approved. As a result, DXB has multiple patients from both the 2017 Phase 2a and current Phase 2 study remaining on DMX-200.

DMX-200 awarded orphan drug status: DMX-200 is being developed to treat FSGS. Due to the fact FSGS is a relatively rare disease, DMX-200 has been given orphan drug status in both the U.S. and Europe, which encourages drug development by providing a range of incentives.

Diabetic Kidney Disease has a large addressable market: DMX-200 is being developed to treat diabetic kidney disease. Circa 40% of all people with diabetes develop the condition, and it's currently a US$5.8b market and is expected to grow at CAGR of 5.1% pa.

DMX is a drug development platform: DMX has a proprietary platform, Receptor-HIT that can identify druggable G Protein-Coupled Heteromers. This represents the leading edge of new pharmaceutical drug development as over 30% of all drugs work via G Protein-Coupled receptors which are present throughout the body.

DXB has a potential pipeline of other drugs: DXB has another drug in development, DMX-700, which is not yet in the clinic. The Receptor-HIT platform will help DXB to discover different druggable receptor combinations giving the company a long runway of potential novel treatments that can be brought to market.

Recommendation

We initiate with a SPEC BUY recommendation and a price target of $0.40 ps.

Initiation Report

Company Background

DXB has two indications in the clinic

DXB is an Australian biopharmaceutical company. DXB has two indications in the clinic and another one in pre-clinical development. DXB is the owner of a proprietary assay technology called Receptor Heteromer Investigation Technology, also known as Receptor-HIT for short. Receptor-HIT analyses G Protein-Coupled receptors to identify combinations of existing drugs that can be repurposed and used to treat diseases. The two indications in the clinic and in pre-clinical development were discovered using the Receptor-HIT platform. There are likely to be many more drug combinations that can be used to treat a wide variety of diseases that can be identified by the Receptor-HIT platform to create novel treatments for diseases.

DXB core technology, Receptor-HIT was developed at the West Australian Institute of Medical Research.

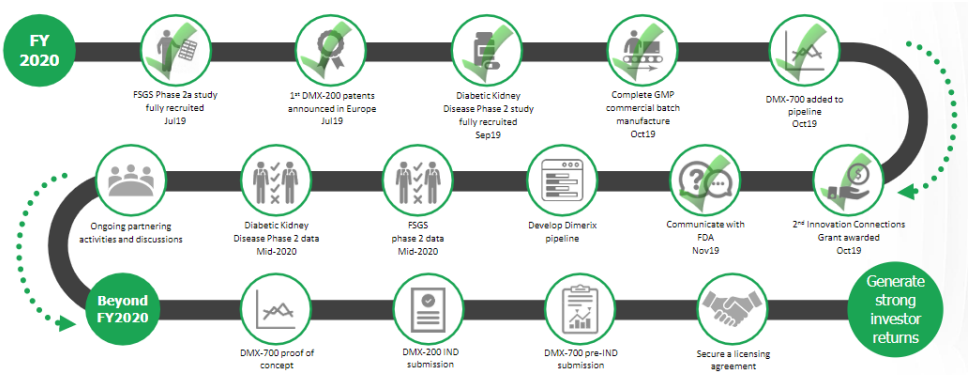
DXB is headquartered in Melbourne, but its core technology was developed at the West Australian Institute of Medical Research now the Harry Perkins Institute of Medical Research which is located at the University of Western Australia's Medical School.

DXB has two drugs in development. DMX-200, which is targeting focal segmental glomerulosclerosis (FSGS) and diabetic kidney disease and this drug is currently in Phase 2 clinical testing. The second drug in development, DMX-700, is targeting chronic obstructive pulmonary disease (COPD) and is in pre-clinical development. DXB also has other drug candidates in early-stage development that have been discovered using its proprietary Receptor-HIT platform.

DMX-200 has been granted orphan drug status for the treatment of FSGS in both the US and Europe

DMX-200 has been granted orphan drug status for the treatment of FSGS in both the U.S. and Europe. Orphan drug status is granted when the authorities determine that a disease is rare and so may have a limited patient population making it difficult for drug companies to earn a return on the money they have spent on developing treatments. To encourage drug companies to develop the drugs to treat these "Orphan Diseases" several incentives are offered to ensure companies are rewarded for their efforts. These can include easier and shorter approval pathways which are less onerous and more cost-effective, financial incentives and an extended period of exclusivity. Also, these drugs can attract "orphan drug pricing" which is typically significantly higher.

Figure 1: DXB planned activities for 2020



Source: DXB

Valuation and Recommendation

We have developed a risked DCF model to value DXB's lead asset DMX-200

We have developed a risked DCF model to value DXB's lead asset DMX-200 based on its progress through the full approval process. The basis of our DCF is the FSGS, and diabetic kidney disease overall market size and the potential U.S. market share DMX-200 could capture when approved and commercialised. We have not valued any sales outside of the U.S. at this point. We have not included a value for the Receptor-HIT platform and DMX-700 at this point. Still, we believe these assets are valuable because of Receptor-HIT's role in discovering new drugs and DMX-700 will be progressing to the clinic within two years.

We value DXB on a risked basis at $0.40 p/s and initiate with a SPEC BUY.

We initiate with a price target of $0.40 per share and with a SPEC BUY recommendation. We believe if the mid-year study results are successful, DXB has the potential to rerate strongly due to the market appeal of the indications they are studying. DXB has $3.85m in the bank and is well funded to complete its current studies and programs.

Figure 2. Valuation Model Detail

General Assumptions	Unit	Value
Target IRR	%	17%
Cost of Equity	%	15%
Cashflow Conversion	%	22%
Unpaid Capital	$m	62.7
Average Raising Price	$	0.30
Assumed Dilution	%	59%
Corporate Costs	$m	-13.40
Diluted Portfolio Value	**$m**	**72.12**
Value per share	**$**	**0.40**

FSGS	Unit	Value
Market Size (US only)	US$b	700.0
CAGR	%	8.0%
DMX-200 Market Share	%	40.0%
Likelihood of Approval	%	24.4%
Risk Adjusted NPV	$m	81.89

Diabetic Kidney Disease	Unit	Value
Market Size (US Only)	US$b	1,100.0
CAGR	%	3.70%
DMX-200 Market Share	%	33.0%
Likelihood of Approval	%	24.4%
Assumed DXB Ownership	%	50.0%
Risk Adjusted NPV	$m	35.83

Source: Argonaut

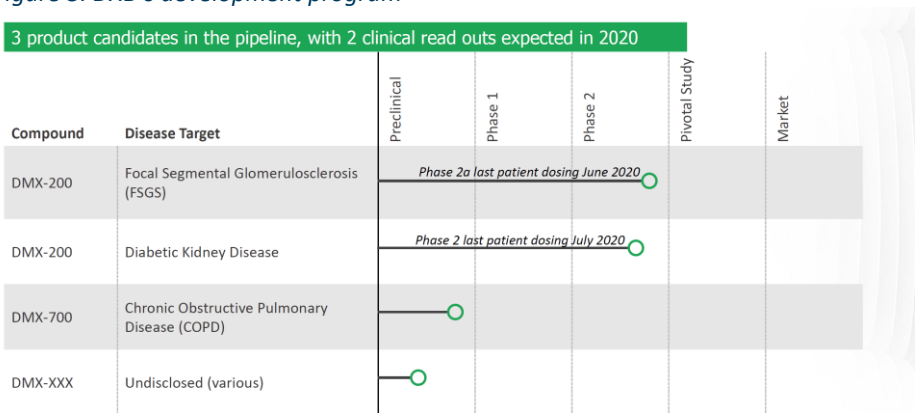
Model Assumptions

We have used conservative assumptions when valuing DXB

1. The FSGS market size of US$700m is based on the number of sufferers in the U.S., the average cost of orphan drug pricing and the fact that circa 10% of patients are treated with an approved orphan drug. We have assumed a market share of 40% due to fact there are not many competitors developing drugs for this indication.
2. The diabetic kidney disease market size is based on the potential 2m scripts a year for patients on Irbesartan who may still need further treatment. This market is valued at US$1.1b per year. We have assumed DMX-200 captures 33% of this market due to its patent position that protects it from the use a combination of any Chemokine Receptor (CCR2) Antagonist with any Angiotensin Receptor Blocker (ARB).
3. We assumed DXB remains 100% owner of the FSGS asset.
4. We have assumed DXB sells 50% of the Diabetic Kidney Disease asset and DXB is free carried to full approval and cashflow.
5. We have discounted cashflows to date of approval at the drug companies target IRR of 17% and then to today at a 15% cost of equity
6. Cashflows are risked at 24.4%, and development costs are risked at between 69.6% and 100% depending on the approval stage

DXB Drugs in Development

Figure 3. DXB's development program



Source: DXB

DMX-200 and Irbesartan is a drug combination that was discovered using the Receptor-HIT platform.

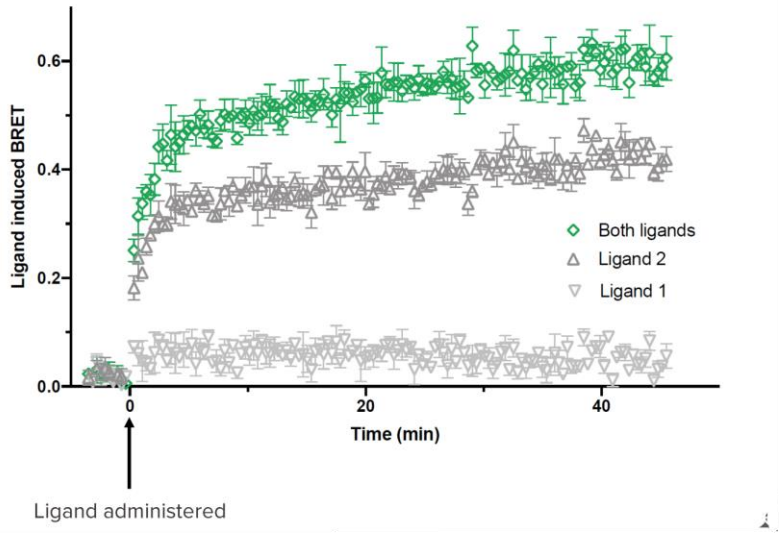
DXB's Lead Candidate – DMX-200

DMX-200 and Irbesartan is a drug combination that was discovered using the Receptor-HIT platform. Irbesartan is the current standard of care for kidney disease. DMX-200 is a small molecule known as propagermanium which inhibits the activity of the Chemokine Receptor Type 2 (CCR2) and which controls cell inflammation. For an explanation on how receptors work and DXB's Receptor-HIT technology, please see "The Dimerix Receptor-HIT Platform" section later in this report.

When DMX-200 Irbesartan used together create an amplified response in the target receptors improving patient outcomes

When DMX-200 is administered to patients already receiving an angiotensin receptor blocker (ARB) such as Irbesartan, DMX-200 blocks the CCR2 receptor. It creates an amplified response that would be greater than if the patient were only receiving the angiotensin receptor blockage drug. This is shown in figure 2.

Figure 4. Graph showing the heteromer amplified response when both ligands are administered



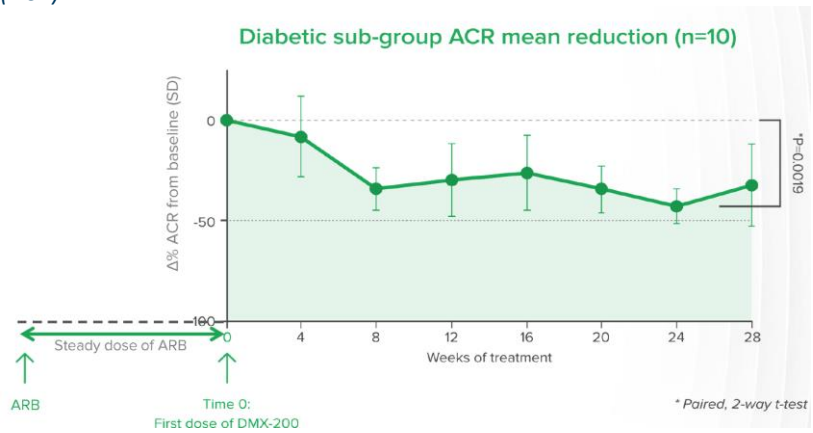
Source: DXB

Certain kidney cells express both receptors and using a single drug, Irbesartan, will only block one set of receptors resulting in a partial response. If both drugs are administered concurrently (Irbesartan and DMX-200), they act together and block both receptors and a more effective response is achieved, which results in a lower level of kidney damage. Damage to kidney cells can be measured by the amount of protein in the urine known as proteinuria.

DMX-200 in concert with Irbesartan reduced ACR levels by 36% more than Irbesartan by itself.

A 2001 study found that on average Irbesartan on its own reduced proteinuria levels by approximately 24%. The 2017 DMX-200 Phase 2a study conducted by Dimerix found that DMX-200 given to patients taking a stable dose of Irbesartan reduced proteinuria levels by a further 36% in a diabetic subgroup of 10 patients. To be clear, this is in addition to the 24% reduction by Irbesartan discussed above. The FDA defines a 30% reduction in proteinuria as a key level when defining the effectiveness of a treatment. A 30% reduction in proteinuria translates to a 3 to 5-year delay in a patient going onto dialysis.

Figure 5. Phase 2a results showing the change from baseline albumin to creatinine ratio (ACR)



Source: DXB

Once the kidney's ability to filter the blood and regulate water fluid levels in the body is compromised, the patient has to undergo regular dialysis to survive or have a kidney transplant. Dialysis is a costly and time-consuming process that severely compromises a patient's quality of life.

DXB have granted method of use patent for DMX-200

Figure 6: DXB has a granted method of use patent for DMX-200:

	United States	European Union
Method of Use	Any Chemokine Receptor (CCR2) Antagonist with any Angiotensin Receptor Blocker (ARB)	DMX-200 with irbesartan
Expiry	2033	2032
Granted Patent Numbers	US 9,314,450 US 10,058,555 US 10,525,038	EP 2663304
Orphan Exclusivity	7 years	10 years
Diabetic Kidney Disease Exclusivity	5 years	8 years

Source: DXB

Active Pharmaceutical Ingredient (API)

The DMX-200 Active Pharmaceutical Ingredient (API) is Propagermanium. It is approved as a drug in Japan as an immune modulator for hepatitis B and has limited availability elsewhere as an alternative medicine and raw material in health food. However, it has never been approved by a regulatory authority in the U.S., Europe or Australia, and it is classified as a New Chemical Entity (NCE) in the U.S. NCE status can allow for up to 5 years of exclusivity in the U.S. and E.U.. If the drug has orphan status, this can be up to 7 and 10 years respectively.

DMX-200 API has been classified as a New Chemical Entity (NCE) in the U.S.

It was approved for use in Japan and therefore had a known safety profile. DXB is contract manufacturing its propagermanium in an FDA approved GMP manufacturing facility. Once approved, it is anticipated that DMX-200 will be reimbursable from insurers, minimising the patient's out-of-pocket cost. The NCE status and patent protection of DMX-200 provides for an exclusivity period whereby no other compound containing propagermanium can be marketed for the approved indications. Furthermore, under the U.S. regulations, any other compound containing propagermanium will not be able to be legally prescribed or reimbursed for any of the DXB indications that are approved by the FDA.

NCE status can allow for up to 5 years of exclusivity in the U.S. and E.U.

The Current Standard of Care - Irbesartan

Figure 7. 300mg Irbesartan tablets

Source: TABAChemiPharm

The standard of care drug, Irbesartan, treats high blood pressure and helps protect the kidneys from damage due to diabetes. Sanofi Research developed Irbesartan and it was patented in 1990 and the FDA approved the drug for use in 1997. Irbesartan is now off-patent and available as a generic.

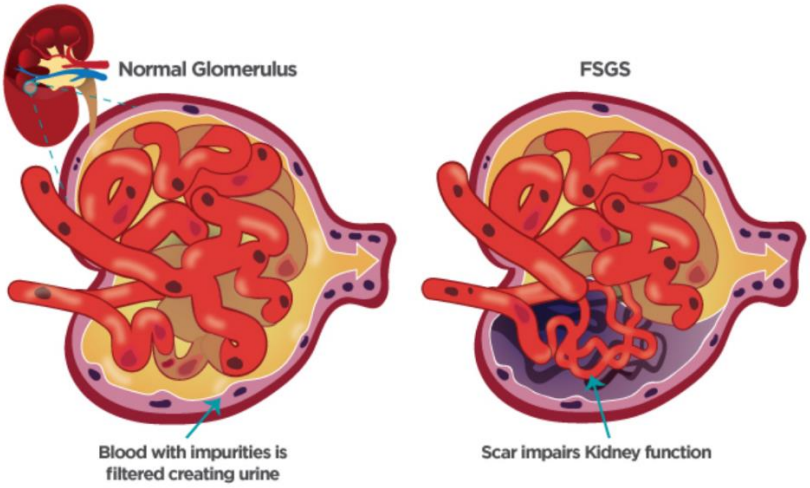
The standard of care drug, Irbesartan, treats high blood pressure and helps protect the kidneys from damage due to diabetes.

It is the 171st most prescribed drug in the United States and has over 4m prescriptions, and of these over 50% of the patients on the drug may still have a high level of protein in the urine. The presence of protein in the urine (proteinuria) is the crucial indicator of kidney damage.

DMX-200 method of action in that it blocks the chemokine receptor (CCR2) which is responsible for hyperfiltration and glomerular hypertension. It also inhibits the attraction of inflammatory cells into the kidneys. Once damaged, kidney cells do not regenerate, which results in a higher level of hyperfiltration in the remaining healthy cells, placing them under further strain which in turn leads to damage to the healthy cells. Inflammation of the infiltration cells in the kidney causes fibrosis which leads to permanent damage to the kidneys, which reduces effectiveness in filtering blood.

Focal Segmental Glomerulosclerosis (FSGS)

Figure 8. Diagram showing the impact of FSGS on the glomerulus in the kidney



Source: nephcure.org

FSGS is a rare and serious kidney disease which leads to nephrotic syndrome

FSGS is a rare and serious kidney disease which leads to nephrotic syndrome, which is a collection of symptoms such as proteinuria, low blood albumin, high blood lipids and swelling. This is particularly prevalent in children and adolescents and is the leading cause of kidney failure in adults.

There are about 210,000 sufferers globally with about 80,500 in the US.

There are about 210,000 sufferers globally with about 80,500 in the U.S. Over a period of 5 years the disease progresses to end-stage renal disease. The only option is dialysis and ultimately, a transplant. There are 93,000 patients on the kidney transplant list in the U.S. More than 5,400 cases are diagnosed in the U.S. each year, and it is expected that growth will accelerate at a CAGR of 8% per annum. It also reoccurs in about 30% to 40% of transplant patients.

Due to the relatively rare nature of FSGS DMX-200 has been awarded orphan drug designation in the U.S. and E.U. Only 10% of patients with a rare disease are treated with an approved orphan drug. The average orphan drug pricing is circa US$7,000 per month, which gives DXB a potential addressable market for DMX-200 of US$700m a year.

DMX-200 has been awarded orphan drug designation in the U.S. and E.U.

The orphan status for DMX-200 being used as a treatment for FSGS has led to DXB being given dispensation by the FDA to conduct only one Phase 3 trial on a much smaller group of patients. Even though Diabetic Kidney disease has a much larger addressable market, it would be attractive for DXB to develop DMX-200 for FSGS first due to the smaller and thus less complex studies needed and this will allow DXB to commercialise DMX-200 in a much shorter time frame. The company have reported that the FDA is supportive of this strategy.

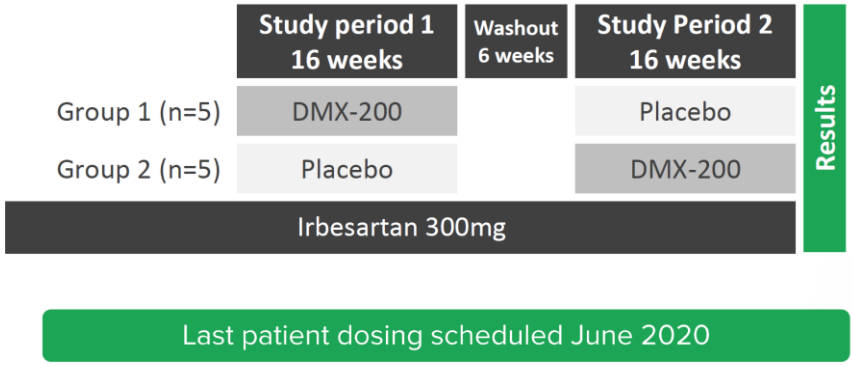
DXB is in the process of conducting a Phase 2a clinical trial on FSGS.

DXB is in the process of conducting a Phase 2a clinical trial on FSGS. The trial is a double-blind, randomised, placebo-controlled, crossover, study evaluating the safety and efficacy of propagermanium in patients with primary FSGS who are receiving Irbesartan. There are ten patients in the study.

The primary endpoint of the study is safety, and the secondary endpoints are the level of proteinuria and biomarker analysis. The study is fully recruited, and readout is expected in June 2020.

Figure 9. Phase 2a FSGS study design

DXB is completing a Phase 2 410 patient double-blind, randomised, placebo-controlled, cross over study to evaluate the safety and efficacy of DMX-200



Source: DXB

If the results from this study are positive when they read out mid-year, DXB intends to move to a Phase 3 study. The FDA has given DXB guidance to conduct a smaller than typical single Phase 3 study, with an accelerated approval endpoint. On successful completion of this study, the FDA will likely approve the drug for sale to the market. Its orphan status will allow DXB to rapidly commercialise DMX-200 for FSGS. The fact that the safety profile is well known will help the facilitate progress. Due to the reduced size of the Phase 3 study required for approval, it may be possible for DXB to do the study on its own, thereby raising the value of its asset.

Diabetic Kidney Disease

Diabetic Kidney Disease is also known as Diabetic Nephropathy. It is the loss of chronic kidney function in patients with diabetes and results in high protein levels in the urine. It is characterised by a fall in the glomerular filtration rate of the kidneys that ultimately leads to end-stage kidney disease.

According to the World Health Organisation the global incidence of diabetes has risen from 108m in 1980 to 422m people in 2014

There are about 23 million diabetics in the U.S., and it is estimated 40% of these have kidney disease. It is, therefore, a common disease and the longer that patients can delay the onset of end-stage kidney disease, the better their quality of life. Dialysis can cost up to US$100,000 per patient per year and patients can require more than 12 hours of treatment per week. The market size in 2018 was US$5.8 billion, and the market is expected to grow 5.1% with 48% of the growth coming from the Americas.

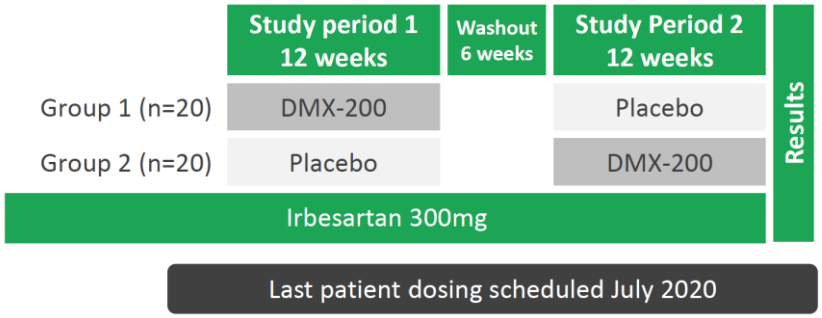
According to the World Health Organisation, the global incidence of diabetes has risen from 108m in 1980 to 422m people in 2014. The increase in cases is due to the growth in world population, people living longer, the rise of obesity in more developed populations coupled with poor diets and sedentary lifestyles.

Considering the fact that circa 40% of diabetes patients go on to develop diabetic kidney disease, there are strong macro tailwinds in terms of patient growth. There has also been very little innovation in this space for several years making new treatments potentially valuable.

Currently, DXB is completing a Phase 2, 40 patient, double-blind, randomised, placebo-controlled, cross over study to evaluate the safety and efficacy of Propagermanium in patients with Diabetic Kidney Disease in the clinic. Patients are being treated with Irbesartan and are either being given DMX-200 or a placebo depending on the study arm.

Figure 10. Phase 2 Diabetic Kidney Disease Study design

DXB is completing a Phase 2, 40 patient, double-blind, randomised, placebo-controlled, cross over study on Diabetic Kidney Disease



Source: DXB

After 12 weeks on the active or placebo arm patients receive only Irbesartan for a six week washout period before being switched to the opposite arm of their initial treatment. This study is expected to read out in July 2020.

DXB will not receive any concessions for a Phase 3 program due to the fact Diabetic Kidney Disease is not an orphan disease so the Phase 3 study program will be much larger than the Phase 2 study and may well contain two separate Phase 3 studies. This will be expensive, and DXB may well need to find a partner. However, if DMX-200 is commercialised and therefore de-risked, DXB could receive very favourable terms.

Due to the fact Irbesartan is off-patent, DXB may well look at reformulating DMX-200 and Irbesartan into a single tablet for patient convenience.

Special Access Scheme for Compassionate Use

Physicians taking part in the study have made requests to the TGA special access scheme to allow patients to remain on DMX-200 when they come off the study

The physicians taking part in the study have made requests to the Therapeutic Goods Administration (TGA) Special Access Scheme to allow patients to remain on DMX-200 when they complete the study. As a result, DXB has multiple patients from both the 2017 Phase 2a and current Phase 2 study still being treated with DMX-200.

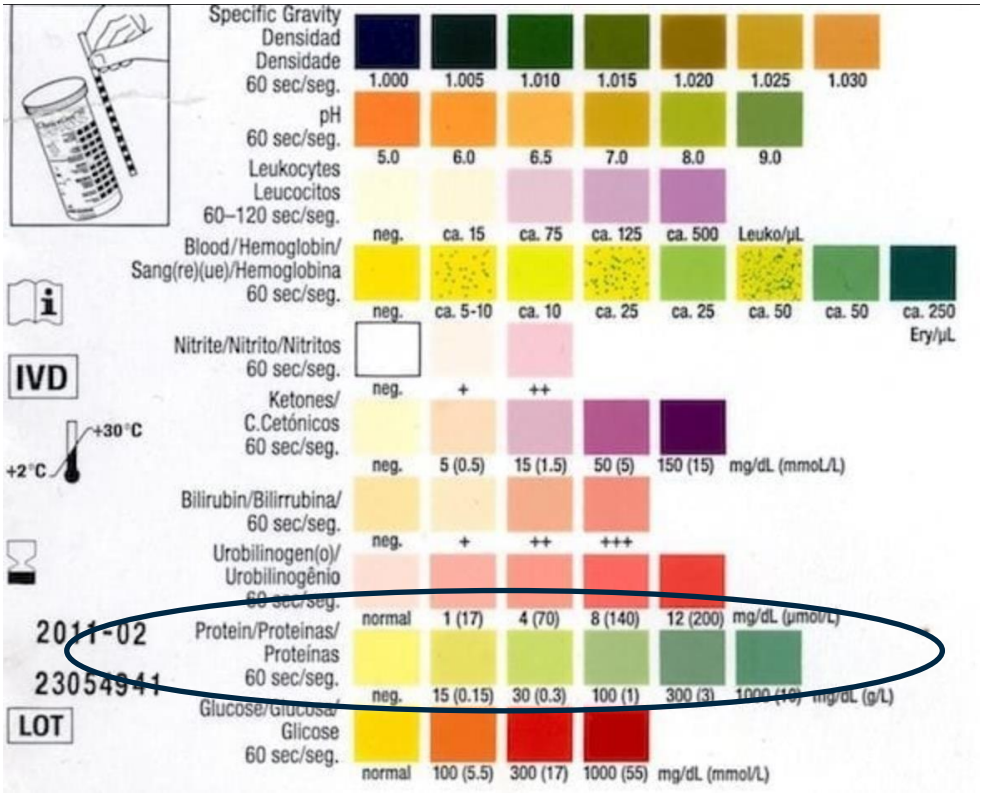
It is likely that a standard urine testing kit is used by the physician to test the amount of proteinuria in a patient's urine. Therefore, the treating physician is likely getting real-time feedback on the patient's progress during the study and is in a position to judge if staying

on DMX-200 is beneficial for the patient. The fact that multiple applications have been made to keep patients on DMX-200 is a strong indication that potentially positive results are being observed in the clinic. When assessing each application, the TGA will take into account the safety profile and efficacy of the treatment as well as the absence of alternative approved therapies

DXB have no role in this process beyond supplying the drug

DXB has no role in this process beyond supplying the drug once approval is received as the physician entirely drives this process. DXB also will have no idea of any of the individual patient outcomes as this remains protected under doctor/patient confidentiality.

Figure 11. Urine Analysis Chart



Source: Litfl.com

Physicians can use standard kits for testing

DMX-700

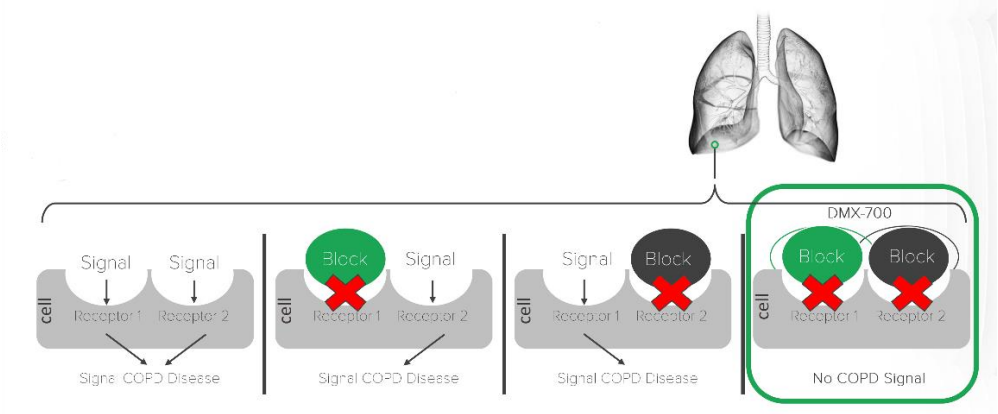
DXB has a second drug in development, DMX-700, which is not yet in the clinic

DXB has a second drug in development, DMX-700, which is not yet in the clinic. DMX-700 has been identified by the Receptor-HIT platform and blocks the heteromer signalling receptors active in chronic obstructive pulmonary disease (COPD). Each of the molecules that have been targeted for treating COPD has an established safety profile. Chronic bronchitis and emphysema are forms of COPD. Symptoms include shortness of breath and a cough with sputum production. COPD is a progressive disease, and by slowing down or arresting disease progression will improve a patient's quality of life.

The initial research into DMX-700 was funded from an innovation connections grant that was awarded to DMX in November 2018. DMX expects to have DMX-700 in the clinic within two years.

DMX-700 is targeting chronic obstructive pulmonary disease

Figure 12. DMX-700 Method of Action



DMX expects to have DMX-700 in the clinic within two years.

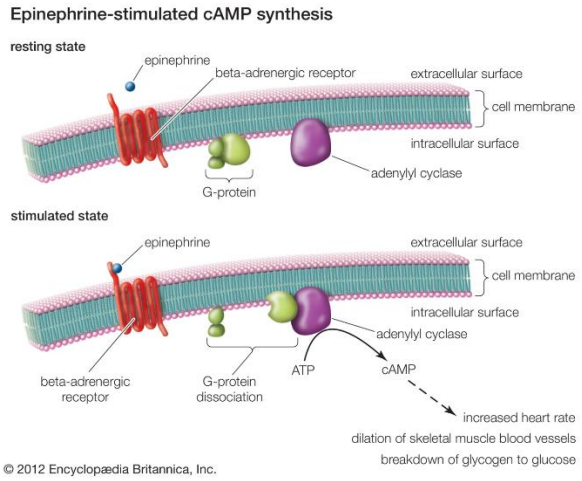
Source: DXB

The Dimerix Receptor-HIT Platform

The Receptor-HIT proprietary assay was invented in 2007

The Receptor-HIT proprietary assay was invented in 2007 in Professor Karin Eidne's laboratory at the former West Australian Institute of Medical Research (WAIMR) now the Harry Perkins Institute of Medical Research located at the University of Western Australia Medical School. This assay is specifically designed to identify the activation of two G-Protein Coupled receptors (GPCRs) that act together, heteromers when activated by a ligand. Patents cover Receptor-HIT in key territories until 2029.

Figure 13. Diagram showing the activation of a single receptor by a ligand



Source: Encyclopedia Britannica

GPCRs are three-dimensional structures that are present within the cell membrane, and due to their highly specific 3D structure, they become easily inactivated by reagents when scientists try to study them. The Receptor–HIT platform uses a proprietary assay technique that facilitates active receptor studies (important for novel drug discovery studies)

The Receptor–HIT platform uses a proprietary assay technique that facilitates active receptor studies

A crucial part of the assay tool is the use of a highly sensitive resonance energy transfer technique using bioluminescence called BRET. BRET measures the energy moving between one light-emitting molecule (a luciferase) and a light-sensitive molecule (a fluorescent molecule) when they are in close proximity (i.e. assays based on this phenomenon can measure when the receptors are linked together).

Figure 14. Jellyfish bioluminescence is part of the BRET assay

Source: Various

A receptor is a protein that is present in the cell membrane that enables a cell to communicate chemically with its surrounding environment.

Receptor-HIT has been licensed to global leading pharmaceutical companies to profile receptor targets and was recently licensed to Excellerate Bioscience on a non-exclusive basis in 2019.

Why are G Protein-Coupled Receptors Important?

A receptor is a protein that is present in the cell membrane that enables a cell to communicate chemically with its surrounding environment. There are many different types of receptors, and they have unique linkages that allow them to react with distinct chemical signatures. These receptors, when activated cause the cell to act in a certain way. Cells in a living organism are specialised and perform a specific function.

GPCRs are the largest family of receptors and there are over 1,000 of these receptors in the body.

The compound that "binds" to the receptor to activate it is called a ligand, and it has a specific shape like a key that allows it to "unlock" the receptor setting off the chemical reaction. An example is shown in Figure 10, which shows adrenaline also known as epinephrine binding to a cell, which will trigger the cells to increase heart rate, dilate blood vessels and breakdown glycogen to glucose to create energy for the natural response of flight or fight.

GPCRs are the largest family of receptors, and there are over 1,000 of these receptors in the body. Each GPCR is specific to a particular function and cell type and can regulate many different pathways and systems, (i.e. reproduction, the endocrine and immune systems, pain, anti-inflammatory, growth, sense of smell, of taste, vision and behavioural attributes). As a result, GPCRs are the target of 30% to 50% of all modern drugs and this list is growing.

It has been found that when receptors act together, the receptor response can be amplified

Synthetically designed "antagonist ligands" can bind to a receptor, and instead of activating it, can block it, preventing the chemical signal from taking place. An example of this is naloxone binding onto the opioid receptors on the cell surface, to counter the effect of a morphine overdose.

Before 1998, it was believed that a single ligand-activated a single GPCR which then created an individual signal response, as shown in Figure 10. In 1998 the first GPCRs working in concert were identified, and these GPCRs described as heteromers. Several heteromers have been identified, and this receptor "cross-talk" is essential in that they offer new and innovative ways to treat diseases. It has been found that when receptors

act together, the receptor response can be amplified or in some cases, completely, different signalling pathways can be activated. Also, the various combinations of GPCRs can form thousands of different heteromers, creating many more drug targets for the treatment of diseases.

A vital part of the Receptor-HIT platform is the ability to identify heteromer GPCR pairings that can be activated using two drugs

An analogy would be a door with a lock, the key that unlocks the door can be thought of as the ligand, once the "key" is in inserted in the lock (the GPCR) and the door is unlocked, and the door opens. If a door has two locks in the door very close together (a heteromer), the single key (ligand 1) unlocks one lock (receptor 1) and because they are so close together, the second lock (receptor 2) is also activated by the first lock, and the door bursts open.

Two GPCR platforms were acquired in 2015

In the same way, activating a heteromer with a drug can result in an amplified response meaning less drug is needed to create the signal, thereby reducing dosage improving patient safety and reducing potential toxic side effects.

A vital part of the Receptor-HIT platform is the ability to identify heteromer GPCR pairings that can be activated using two drugs. The combination of two druggable GPCRs is that heteromers that can be activated or blocked by a drug combination can have positive therapeutic impacts such reducing the amount of drug needed for treatment as many drugs are toxic at higher concentrations.

Other GPCR Assay Platforms

Two GPCR platforms were acquired in 2015; Heptares for US$400m with one product in the clinic and Receptos for US$7.2bln, which had a drug for Inflammatory Bowel Disease and Multiple Sclerosis in phase 3 testing.

Directors

James Williams – Non-Executive Chairman

James is a Founder and Investment Director of Yuuwa Capital L.P., a venture capital firm based in Western Australia and was the CEO of Dimerix between 2007 and 2009. Prior to establishing Yuuwa Capital and managing Dimerix, James was Managing Director of two medical device companies, ASX-listed Resonance Health Ltd and Argus Biomedical Pty Ltd, both of which took their products to market under his guidance. James also co-founded and is a former CSO and Director of iCeutica, Inc., a clinical stage nano drug reformulation company that was acquired in 2011. James is a Director of Yuuwa investee companies Adalta Pty Ltd, PolyActiva Pty Ltd and iCetana Pty Ltd. James is also a Director of Linear Clinical Research Ltd, a specialist early phase clinical trial unit, a member of the "Panel of Experts" for the University of Western Australia's Pathfinder Fund and a member of the Federal Government's Entrepreneur Program Committee. James completed his undergraduate degree in Biochemistry at the University of Aberdeen, PhD at Melbourne University and MBA at the University of Western Australia.

Nina Webster – CEO/MD

Nina has over twenty five years of experience in the pharmaceutical industry, with leadership roles in investor relations, business development, and prosecution of intellectual property matters, as well as leading and managing the strategic, scientific and operational aspects of product development. Nina was formerly the Commercial Director for Acrux Limited (ASX: ACR), an Australian drug pharmaceutical company that has successfully developed and commercialised three products globally. Prior to Acrux, Nina was Director of Commercialisation and Intellectual Property for Immuron Limited (ASX: IMU), and previously spent 6 years in new product development with Wyeth Pharmaceuticals in the U.K. Nina holds a Ph.D in Pharmaceutics from Cardiff University, a Bachelor degree in Pharmacology, a Masters degree in Intellectual Property Law from Melbourne University and an MBA from RMIT.

Hamish George - Chief Financial Officer / Company Secretary

Hamish has experience in providing financial advice and CFO services to businesses ranging from small start-ups to large established businesses with turnover of over $50 million. He brings expertise in areas including financial/management reporting, Company Secretarial, cash flow management, taxation including (R&D Tax Incentive), Company Establishments, company valuations, budgeting and forecasting. Hamish is also a member of the senior management team at Bio101, a financial services firm providing outsourced CFO, tax and company secretarial solutions to the life science sector. Hamish holds a Bachelor of Commerce from the University of Melbourne, a Diploma in Financial Planning from Kaplan Professional, a Masters Degree in Professional Accounting from RMIT, a Certificate in Governance Practice from the Governance Institute of Australia and is a qualified Chartered Accountant.

Sonia Poli - Non-Executive Director

Sonia is currently Executive Manager at A.C. Immune, a Nasdaq listed company, and has previously worked within Swiss Stock Exchange listed companies Hoffman la Roche and Addex Therapeutics, where she has held leadership and executive positions across various disciplines in drug discovery, pre-clinical development and translational science and has interacted with regulatory authorities, investors and public funding institutions. Sonia has held various corporate responsibilities such as outsourcing and out-licensing, and she has promoted academic collaborations and supported R&D collaborations with external partners.

Sonia is an accomplished R&D professional with 20 years international experience in large and small pharmaceutical companies. She has broad knowledge of small molecule drug design, optimisation and early clinical development, with expertise which encompasses multiple therapeutic areas. Sonia is co-author of more than 50 scientific papers and several patents. Sonia holds a Masters degree and a PhD in industrial chemistry from Milan University (I.T.).

Hugh Alsop - Non-Executive Director

Hugh is an accomplished pharmaceutical and biotechnology executive with 20 years of experience in international business development, partnering, drug development and leadership of scientific teams. Hugh has demonstrated commercial management skills, profit accountability, and senior oversight of drug development programs for the international market. Hugh has a track record of being part of two significant exit transactions for the Australian life sciences industry, including two successful Phase 3 programs and two FDA approvals for Australian developed products.

Hugh's most recent role was the Chief Executive Officer of Hatchtech Pty Ltd, where he helped secure a $200 million commercialisation agreement for its lead development product with global Indian pharmaceutical company Dr Reddy's. In 2010, as Director of Business Development at Acrux Limited, Hugh was a key member of the team that licensed the testosterone product Axiron™, to global pharmaceutical company Eli Lilly for up to US$335m in potential milestones plus royalties.

Robert Shepherd - Research & Development Director

Robert is an experienced pharmaceutical executive having lead multidisciplinary research and development teams for over 11 years. Prior to joining the Dimerix team, Robert was a Senior Development Manager at Medicines Development for Global Health, a non-profit organisation focused on efficiently developing drugs for orphan and neglected indications. In this role, he supported biotechnology and academic groups in project management roles spanning research, manufacturing, nonclinical, clinical and regulatory fields in pain, immunology, infectious diseases, and oncology. Robert has previously held roles as a Business Analyst at the Monash Vision Group, Communications Advisor at the Australian Society of Plant Scientists, and Sessional Lecturer at Monash University. Robert holds a B.S. in Genetics (Honours), PhD in molecular cell biology and immunology, and a graduate certificate in science commercialisation from Monash University, Australia.

RESEARCH:

Ian Christie | Head of Research
+61 8 9224 6872 ichristie@argonaut.com

Matthew Keane | Director, Metals & Mining Research
+61 8 9224 6869 mkeane@argonaut.com

James Wilson | Analyst, Metals & Mining Research
+61 8 9224 6835 jwilson@argonaut.com

Helen Lau | Analyst, Metals & Mining Research
+852 3557 4804 hlau@argonaut.com

Michael Eidne | Director, Research
+61 8 9224 6831 meidne@argonaut.com

Jeff Sansom | Research Associate
+61 8 9224 6890 jsansom@argonaut.com

INSTITUTIONAL SALES - PERTH:

Chris Wippl | Executive Director, Head of Institutional Sales
+61 8 9224 6875 cwippl@argonaut.com

Damian Rooney | Director Institutional Sales
+61 8 9224 6862 drooney@argonaut.com

John Santul | Consultant, Sales & Research
+61 8 9224 6859 jsantul@argonaut.com

Ben Willoughby | Institutional Dealer
+61 8 9224 6876 bwilloughby@argonaut.com

Josh Welch | Institutional Dealer
+61 8 9224 6868 jwelch@argonaut.com

George Ogilvie | Institutional Dealer
+61 8 9224 6871 gogilvie@argonaut.com

INSTITUTIONAL SALES – HONG KONG:

Damian Rooney | Director Institutional Sales
+61 8 9224 6862 drooney@argonaut.com

CORPORATE AND PRIVATE CLIENT SALES:

Glen Colgan | Managing Director, Desk Manager
+61 8 9224 6874 gcolgan@argonaut.com

Kevin Johnson | Executive Director, Corporate Stockbroking
+61 8 9224 6880 kjohnson@argonaut.com

James McGlew | Executive Director, Corporate Stockbroking
+61 8 9224 6866 jmcglew@argonaut.com

Geoff Barnesby-Johnson | Senior Dealer, Corporate Stockbroking
+61 8 9224 6854 bj@argonaut.com

Philip Grant | Senior Dealer, Corporate Stockbroking
+61 8 9224 6834, pgrant@argonaut.com

Rob Healy | Dealer, Private Clients
+61 8 9224 6873, rhealy@argonaut.com

Cameron Prunster |Dealer, Private Clients
+61 8 9224 6853 cprunster@argonaut.com

James Massey |Dealer, Private Clients
+61 8 9224 6849 jmassey@argonaut.com

Chris Hill | Dealer, Private Clients
+61 8 9224 6830, chill@argonaut.com

Harry Massey | Dealer, Private Clients
+61 8 9224 6829, hmassey@argonaut.com

Important Disclosure
Argonaut participated in the Placement to raise $2.5M in December 2019 and received fees commensurate with this service.

Analyst Disclosure
The Analyst has an association with the one of the original inventors of Receptor-HIT (Patent PCT/AU2007/001722).
The Analyst has no direct, indirect or beneficial holding in DXB.

Information Disclosure
Each research analyst of this material certifies that the views expressed in this research material accurately reflect the analyst's personal views about the subject securities and listed corporations. None of the listed corporations reviewed or any third party has provided or agreed to provide any compensation or other benefits in connection with this material to any of the analyst(s).

For U.S. persons only
This research report is a product of Argonaut Securities Pty Limited, which is the employer of the research analyst(s) who has prepared the research report. The research analyst(s) preparing the research report is/are resident outside the United States (U.S.) and are not associated persons of any U.S. regulated broker-dealer and therefore the analyst(s) is/are not subject to supervision by a U.S. broker-dealer, and is/are not required to satisfy the regulatory licensing requirements of FINRA or required to otherwise comply with U.S. rules or regulations regarding, among other things, communications with a subject company, public appearances and trading securities held by a research analyst account.

This report is intended for distribution by Argonaut Securities Pty Limited only to "Major Institutional Investors" as defined by Rule 15a-6(b)(4) of the U.S. Securities and Exchange Act, 1934 (the Exchange Act) and interpretations thereof by U.S. Securities and Exchange Commission (SEC) in reliance on Rule 15a 6(a)(2). If the recipient of this report is not a Major Institutional Investor as specified above, then it should not act upon this report and return the same to the sender. Further, this report may not be copied, duplicated and/or transmitted onward to any U.S. person, which is not the Major Institutional Investor.

In reliance on the exemption from registration provided by Rule 15a-6 of the Exchange Act and interpretations thereof by the SEC in order to conduct certain business with Major Institutional Investors, Argonaut Securities Pty Limited has entered into an agreement with a U.S. registered broker-dealer, Marco Polo Securities Inc. ("Marco Polo"). Transactions in securities discussed in this research report should be effected through Marco Polo or another U.S. registered broker dealer.

Hong Kong Distribution Disclosure
This material is being distributed in Hong Kong by Argonaut Securities (Asia) Limited which is licensed (AXO 052) and regulated by the Hong Kong Securities and Futures Commission. Further information on any of the securities mentioned in this material may be obtained on request, and for this purpose, persons in the Hong Kong office should be contacted at Argonaut Securities (Asia) Limited of Unit 701, 7/F, Henley Building, 5 Queen's Road Central, Hong Kong, telephone (852) 3557 48000.

General Disclosure and Disclaimer
This research has been prepared by Argonaut Securities Pty Limited (ABN 72 108 330 650) ("ASPL") or by Argonaut Securities (Asia) Limited ("ASAL") for the use of the clients of ASPL, ASAL and other related bodies corporate (the "Argonaut Group") and must not be copied, either in whole or in part, or distributed to any other person. If you are not the intended recipient you must not use or disclose the information in this report in any way. ASPL is a holder of an Australian Financial Services License No. 274099 and is a Market Participant of the Australian Stock Exchange Limited. ASAL has a licence (AXO 052) to Deal and Advise in Securities and Advise on Corporate Finance in Hong Kong with its activities regulated by the Securities and Futures Ordinance ("SFO") administered by the Securities and Futures Commission ("SFC") of Hong Kong.

Nothing in this report should be construed as personal financial product advice for the purposes of Section 766B of the Corporations Act 2001 (Cth). This report does not consider any of your objectives, financial situation or needs. The report may contain general financial product advice and you should therefore consider the appropriateness of the advice having regard to your situation. We recommend you obtain financial, legal and taxation advice before making any financial investment decision.

This research is based on information obtained from sources believed to be reliable and ASPL and ASAL have made every effort to ensure the information in this report is accurate, but we do not make any representation or warranty that it is accurate, reliable, complete or up to date. The Argonaut Group accepts no obligation to correct or update the information or the opinions in it. Opinions expressed are subject to change without notice and accurately reflect the analyst(s)' personal views at the time of writing. No member of the Argonaut Group or its respective employees, agents or consultants accepts any liability whatsoever for any direct, indirect, consequential or other loss arising from any use of this research and/or further communication in relation to this research.

Nothing in this research shall be construed as a solicitation to buy or sell any financial product, or to engage in or refrain from engaging in any transaction. The Argonaut Group and/or its associates, including ASPL, ASAL, officers or employees may have interests in the financial products or a relationship with the issuer of the financial products referred to in this report by acting in various roles including as investment banker, underwriter or dealer, holder of principal positions, broker, director or adviser. Further, they may buy or sell those securities as principal or agent, and as such may effect transactions which are not consistent with the recommendations (if any) in this research. The Argonaut Group and/or its associates, including ASPL and ASAL, may receive fees, brokerage or commissions for acting in those capacities and the reader should assume that this is the case.

There are risks involved in securities trading. The price of securities can and does fluctuate, and an individual security may even become valueless. International investors are reminded of the additional risks inherent in international investments, such as currency fluctuations and international stock market or economic conditions, which may adversely affect the value of the investment.

The analyst(s) principally responsible for the preparation of this research may receive compensation based on ASPL's and / or ASAL's overall revenues.