# AUSTRALIAN RESEARCH INDEPENDENT INVESTMENT RESEARCH

# Noxopharm Limited (ASX: NOX)

Initiating Coverage

November 2016



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# Noxopharm Limited (ASX: NOX)

**Initiating Coverage** 

#### **Investment Profile** Share price (\$) as at 15 November 0.35 2016 Issued capital: Ordinary shares (M) 33.56 Restricted Ordinary Shares (M) 41.6 Performance Shares (M) 10.0 Options (M) 22.6 Fully Diluted (M) 107.76 Market capitalisation (\$M) 26.31 12-month Low/high (\$) 0.13/0.385

#### **Board and Management**

Peter Marks: Non-Executive Chairman Dr. Graham Kelly: Managing Director & CEO Dr. Ian Dixon: Non-Executive Director

Major Shareholders	%
Graham & Prue Kelly Family Trust	32.1
DRH Superannuation Pty Ltd	7.3
Anglo Menda Pty Ltd	6.4
HSBC Custody Nominees Ltd	2.5
Aquagolf Pty Ltd	1.9



# **CLINICAL TRIALS TO DETERMINE EFFICACY OF NOX66**

Noxopharm Limited (ASX: NOX) is set to commence clinical trials to determine the efficacy of NOX66, an innovative drug formulation of Idronoxil. NOX66 is designed to be used in conjunction with standard frontline chemotherapy and radiotherapy cancer treatments to reduce or eliminate the drug resistance of cancer cells to the treatments and therefore increase treatment response rates. The company also hopes that the reduced drug resistance from the use of NOX66 will enable lower dosages of cancer treatments to be used, which will in turn enable those patients who cannot be treated or who choose not to be treated, to receive treatment due to the reduction in the level of toxic side-effects.

# **KEY POINTS**

**NOX66:** NOX is seeking to progress the development of NOX66, a dosage formulation of Idronoxil intended to reduce or eliminate the drug resistance mechanisms of cancer cells to chemotherapy and radiotherapy treatments to improve response rates and potentially reduce the dosage required. NOX66 is designed to prevent the Idronoxil from Phase 2 metabolism, delivering the Idronoxil to the cancer cells in an active form.

**NOX66 Clinical Trials:** The company is ready to commence clinical trials of NOX66 in combination with chemotherapy and radiotherapy treatments. The trials will be conducted on patients who have a range of late stage cancers that have become unresponsive to standard treatment. The primary aims of the trials are: (a) to determine the safety of NOX66 alone and in conjunction with the chemotherapy and radiotherapy treatment; (b) to determine if NOX66 can provide an improved response of late stage cancers to standard treatment; and (c) to determine if NOX66 can provide meaningful clinical responses to late stage cancers using lower doses of treatment. The trials will be conducted in a timely manner with the Phase 1b studies for both sets of trials expected to be completed before the end of 2017. In the event meaningful responses are achieved in Phase 1b trials, the company will be able to progress to Phase 2a trails immediately.

**Capital Position:** The company raised \$6m in the recent IPO. The capital will be used to progress the development of NOX66. The capital raised will be sufficient to complete the Phase 1a, 1b and 2a clinical trials which are ready to commence. If meaningful clinical responses result from the clinical trials, the company will need to raise additional capital to undertake further trials and progress the development of the drug. Given the potential market opportunity for NOX66, we do not envisage the company having any difficulty in raising further capital, however this will likely result in existing shareholder positions being diluted.

**Market Opportunity:** The market opportunity for NOX66 is significant with sales of oncology drugs worldwide in excess of US\$100b. The top 10 selling chemotherapy drugs in 2015 generated sales of in excess of US\$40b. If the clinical trials show that the use of NOX66 in conjunction with cancer treatments reduces or eliminates the drug resistance of the treatment and improves response rates, this opens up a significant market for the company and provides a platform for the company to create a portfolio of anti-cancer treatments.

**Investment Case**: With 95% of all oncology drugs failing to receive approval, an investment in NOX is highly speculative. With this in mind, we note that the company is seeking to use a compound with which the Managing Director has significant experience and that has been used in clinical trials without any safety concerns. Dr. Kelly has worked with the Idronoxil compound for in excess of 20 years. Dr. Kelly believes he has discovered the delivery method and formulation of Idronoxil that will result in NOX66 delivering the desired results. In the event there is a meaningful response from the impending clinical trials, the market opportunity for NOX66 is significant with the company having the opportunity to significantly alter cancer treatment and potentially provide access to cancer treatments to those who are currently unable to be treated due to the toxicity levels or who choose not to be treated as a result of the side-effects of treatment. We would expect a meaningful response from the rials will highlight whether the drug works in the way the company has developed the formulation for.

# **SWOT ANALYSIS**

#### **STRENGTHS**

- The company is set to commence clinical trials for NOX66. The clinical trials will be conducted in a timely manner, with the impending studies expected to be completed before the end of 2017. The market will be updated regularly with the response rates of the trials.
- The company is not focusing on treating a particular branch of cancer with NOX66 but is seeking to develop a drug that when combined with existing cancer treatments reduces or eliminates the drug resistance mechanisms of cancer cells to these treatments. With global oncology drug sales of in excess of US\$100b, there is a significant market opportunity for NOX66.
- The Managing Director, Dr. Kelly, was the founder of Novogen Limited, which was listed on both the ASX and NASDAQ. Under Dr. Kelly's guidance, Novogen's market cap hit a high of \$880m.
- Dr. Kelly was leading the research team that discovered Idronoxil and has been working with the compound for over 20 years, including supervising its clinical use in over 400 late stage cancer patients.
- Idronoxil is highly selective for cancer cells (no effect on healthy cells) and acts against all forms of cancer.

### WEAKNESSES

- The company is in the early stages of the development of NOX66. As such, the company is not expected to generate any revenue in the short-term and will likely need to raise more capital to continue the development of NOX66 in the event the clinical trials provide sufficiently meaningful results. This will likely result in dilution to existing shareholders.
- The company only has 33.56m shares available for trade at present and a tight shareholder register with Dr. Kelly holding 32% of ordinary shares on issue. As such, the company has limited liquidity and this may result in high levels of volatility in the share price.

#### **OPPORTUNITIES**

- While there has been improvements in the survival rates for some cancers, such as prostate and breast cancer, there remains a number of cancers which do not respond to standard frontline treatment and as such have much lower survival rates, such as lung and pancreatic cancer. NOX66 provides the potential to improve the response rates to standard chemotherapy and radiotherapy treatments, in particular to those patients with late stage cancer that have no other treatment options. This would be a significant leap forward in cancer treatment.
- There are currently no other clinical studies being conducted using the Idronoxil compound, meaning there is no immediate competition regarding the development of an Idronoxil formulation.

#### THREATS

- The clinical trials for NOX66 may not produce successful results. The company has an R&D program designed to add more drug candidates to the pipeline, but there is no certainty that any of these will be successful.
- The company has not been granted any patents over its formulation and delivery method. According to the US National Cancer Institute there are no other clinical trials being conducted using the Idronoxil compound, however, until patents are granted there remains risk to the company's Intellectual Property.
- Unforeseen circumstances including delays in the clinical trials may result in the company spending more capital than expected and resulting in the company having to raise additional capital.
- The executive team is small at this early stage of development. As such the loss of any key personnel would adversely impact the development and commercialisation of NOX66.

## **COMPANY OVERVIEW**

- NOX was listed on the ASX in August 2016 after raising \$6m through the issue of 30m ordinary shares at \$0.20 per share, in an oversubscribed IPO.
- The funds were raised to progress the development of NOX66, an innovative dosage formulation of Idronoxil designed to reduce or eliminate the drug resistance mechanisms of cancer cells to chemotherapy and radiotherapy treatments.
- Idronoxil was discovered in 1992 by a university research team led by Dr. Kelly. The research resulted in the formation of Norvet Ltd, which listed on the ASX in 1994 and subsequently changed its name to Novogen Limited and listed on the NASDAQ in 1998 (ASX: NRT, NASDAQ: NVGN). Novogen showed that Idronoxil possessed a potent ability to sensitise cancer cells to chemotherapy drugs and proceeded to develop Idronoxil as a means of re-sensitising cancer cells to chemotherapy drugs after they had stopped responding to the drug.
- Over 400 patients with various late stage cancers were treated with Idronoxil between 2000 and 2009. Phase 2 studies confirmed an anti-cancer effect. A large multi-national Phase 3 clinical study commenced in 2007, seeking to determine the effect of Idronoxil when combined with carboplatin (a chemotherapy drug). The study was intended to include 340 women but was abandoned in 2009 as a result of issues with patient recruitment. For those patients that did participate, no meaningful response was registered from the use of Idronoxil.
- Dr. Kelly believes that the reason for the failure of Idronoxil in the Phase 3 study was a result of Phase 2 metabolism in the human body, resulting in the modification of the drug by the body that led to it being largely inactivated.
- Dr. Kelly established NOX in 2015 after conducting private research which led to the formulation of Idronoxil as NOX66, which is designed to deliver the Idronoxil to the cancer cells in an active form.
- NOX is set to test this theory in a series of Phase 1 studies where NOX66 will be given in combination with chemotherapy (carboplatin) and radiotherapy to patients with a variety of late stage cancers. The goal of these Phase 1 studies is to determine the safety and efficacy of NOX66 when used in combination with standard treatments.
- In the event meaningful responses are achieved from the Phase 1 studies, the company will progress to Phase 2a clinical trials.
- One of the important features of Idronoxil is that the compound only targets cancer cells and not healthy cells, providing a high level of safety.
- If the trials generate positive results for NOX66, the company will seek to raise additional capital to further develop the drug to commercialisation. This will provide the company platform to create a portfolio of anti-cancer treatments.

# **FINANCIAL POSITION**

- After raising \$6m in an oversubscribed IPO, the company has sufficient capital to complete the phase 1 clinical trials that are set to commence.
- The company is not generating any revenue and is not expected to generate any revenue in the near-term. As such, the company will be dependent on capital raises to fund the development of NOX66 as milestones are achieved.

## **CHEMOTHERAPY AND RADIOTHERAPY**

- Chemotherapy and radiotherapy cancer treatments are standard frontline treatments for most cancers that cannot be surgically removed.
- Both chemotherapy and radiotherapy are "cytotoxic", meaning that they seek to kill cancer cells by poisoning them, mainly by damaging their DNA beyond the point where the cell can repair it. The major pitfall of these treatments is that it doesn't discriminate between the DNA of a cancer cell and a healthy cell, therefore both cancer and healthy cells are killed.

- The collateral damage to healthy cells means that there is a limit to the amount of chemotherapy or radiotherapy that can be tolerated and as such, it usually means that not all cancer cells are killed.
- The below graphic highlights the response of cancer cells and normal cells being killed at different levels of dosage of chemotherapy treatment. The graphic shows that the percentage of normal cells killed is in close step to that of cancer cells at varying dosage levels.



Source: Cytotoxic Chemotherapy: Clinical Aspects, 2008

- Radiotherapy involves targeted doses of radiation in an attempt to reduce the size or eliminate the tumour. Radiotherpay works on the same principle as chemotherapy in inflicting a lethal level of damage on a cancer cell's DNA.
- The success of radiotherapy depends, in principle, on the total radiation dose given, but the tolerance of normal tissues surrounding the tumour limits the dose. The below graphic highlights the results of research undertaken regarding the probability of the response to the radiotherapy treatment and the damage to normal tissue as the radiation dosage increases. As the radiation dose increases, the response rate increases but so does the damage to the normal tissue in the targeted area.



Source: Normal Tissue Reactions to Radiotherapy, 2009

- The dosage limitations of chemotherapy and radiotherapy impact the effectiveness of the treatment.
- Research and development of non-cytotoxic cancer treatments have been, and continue to be, developed, with some of the top selling drugs in recent times being non-cytotoxic. However, these treatments typically have not provided any significant long-term benefit for many cancers and so the traditional forms of chemotherapy and radiotherapy treatment continue to remain the most commonly used treatments for cancer that cannot be surgically removed. We expect this to remain the case for the foreseeable future.



#### **NOX66**

- NOX66 is a dosage formulation of Idronoxil which is designed to deliver the compound to cancer cells in an active form. This is achieved through a combination of the formula and the delivery method.
- NOX66 is intended to be used in conjunction with chemotherapy and radiotherapy treatments to reduce or eliminate the drug resistance mechanisms of these treatments by cancer cells and improve response rates.
- At present, the drug resistance level of cancer cells to chemotherapy and radiotherapy treatments can be high. Different types of cancer have different response rates, which is reflected in the differing survival rates for cancers. For example, in Australia 93% of patients diagnosed with pancreatic cancer will die within five years, while only 10% of patients diagnosed with breast cancer will be deceased. A detailed list of survival rates can be found in the following section.

#### History of Idronoxil in Cancer Treatments

- Idronoxil was discovered in 1992 by a university research team, led by the Managing Director, Dr. Kelly. The research resulted in the formation of Norvet Ltd, which listed on the ASX in 1994 and subsequently changed its name to Novogen Limited and listed on the NASDAQ in 1998 (ASX: NRT, NASDAQ: NVGN).
- Novogen identified two key attributes of Idronoxil: (1) a potent ability to sensitise cancer cells to the effects of chemotherapy drugs; and (2) the selective nature of Idronoxil, resulting in no adverse effect on healthy cells. This discovery highlighted the potential for Idronoxil to be the first drug capable of selectively boosting the effectiveness of chemotherapy drugs on cancer cells.
- A number of clinical trials have been conducted with Idronoxil in both oral and intravenous dosage formulations. Phase 2 studies produced enough evidence to conduct a Phase 3 clinical study, which commenced in 2007. However, difficulties with patient recruitment resulted in the study being discontinued. In addition to the issues with recruitment, the trials undertaken showed no significant clinical benefit from the use of Idronoxil.
- No further studies have been conducted and according to the US National Cancer Institute, there are currently no other clinical trials being conducted using the Idronoxil compound.

#### NOX66 Targeted at Phase 2 Metabolism

- NOX believes it has identified the reason for the lack of response of Idronoxil from the previous clinical trials in humans. NOX believes the Idronoxil was not delivered effectively because of Phase 2 metabolism in the human body.
- Phase 2 metabolism is a natural detoxification process whereby the body converts water insoluble drugs into a water soluble form by binding them to another water soluble compound such as a sugar. The conversion to a water soluble form renders the drug inactive. Healthy cells have the ability to remove the sugar to activate the drug, however cancer cells generally lack the ability to remove the sugar and therefore the drug is not activated and is ineffective as a result.
- NOX66 has been developed to protect the Idronoxil from Phase 2 metabolism to allow the compound to reach the cancer cells in an active form. This is achieved by preventing the body from attaching a water soluble compound to the Idronoxil. The combination of the form of delivery (suppository) and the drug formulation developed by NOX protects the Idronoxil from Phase 2 metabolism.

#### How NOX66 Will Reduce the Drug Resistance of Cancer Treatments

Cancer cells become resistant to chemotherapy drugs and radiation by a number of different mechanisms. One of the major ways is to increase DNA repair mechanisms. DNA repair is a vital part of any cell's activities, with all cells faced daily with carcinogens that damage our DNA. Chemotherapy and radiotherapy seeks to inflict so much damage on a cancer cell's DNA that it is beyond the cells ability to repair it and subsequently dies.

- Cancer cells can turn their DNA repair mechanisms up to very high levels which means that the amount of chemotherapy or radiotherapy required to kill a cancer cell keeps getting higher. Eventually the cell becomes completely immune to treatment and is no longer effective.
- Idronoxil works to disable or inhibit cancer cells drug resistance mechanisms and subsequently make the cancer cells susceptible to cancer treatments.

#### **CLINICAL TRIALS**

- NOX is set to commence clinical trials for the use of NOX66 in combination with both chemotherapy and radiotherapy cancer treatments.
- All patients in the clinical trials will have late stage solid cancers that have become unresponsive to standard treatment and no standard treatment options remain. One of the key benefits of the trials to be conducted is that all patients will receive NOX66, there will be no placebo. This makes it easier to gather patients to participate as they do not risk having to undertake further treatment and not receive the drug.

#### **Chemotherapy Trials**

- The company will be conducting trials to determine the efficacy of NOX66 when combined with Carboplatin, a commonly used chemotherapy drug.
- The trials will be held in Tbilisi, Georgia and will involve three phases, detailed below. The company has chosen to conduct the study in Gerogia because of indications of a relatively fast rate of recruitment.
  - Phase 1a NOX66 will be delivered on its own over a 14 day period to determine toxicity levels of the drug. Idronoxil has proven to be safe in previous clinical trials and as such the company is not expecting any safety issues with NOX66.

The study will involve 15 patients with a range of late stage solid cancers, including breast, prostate, lung, ovary and/or head and neck cancers. The patients will be divided into three equal groups and each group will receive a varying dosage of NOX66 (low, medium or high).

 Phase 1b - In the event there are no toxicity issues in the patients in Phase 1a, then the patients will progress to Phase 1b, where the patients will continue to receive their allocated dosage of NOX66 in combination with carboplatin.

This study will be conducted over a 6 month period, in which patients will undergo 6 cycles of chemotherapy treatment, with each cycle lasting 28 days.

In each cycle, patients will receive NOX66 for seven consecutive days surrounding a single intravenous injection of carboplatin.

For the first 3 cycles, patients will receive a lower than standard dosage of carboplatin, followed by a standard dosage for the last 3 cycles.

Patients will undergo a CT scan at the beginning of the study and at the end of each of the 3 cycle periods to determine the clinical response of the combined treatment. The company will be looking for the following clinical responses: (a) complete response (no tumours visible); (b) partial response (shrinkage and/or no new tumours); (c) stable disease (no change in size or number of tumours); or (d) progressive disease (increase in size and/or new tumours). A meaningful response for the company will be either a complete or partial response from patients in the trials.

Patients who show a complete response (no tumours visible) after the first 3 cycles will stop at that point.

 Phase 2a - In the event of a sufficiently meaningful response in Phase 1a and 1b studies, the company will move into Phase 2a trials. An additional 20 patients will be recruited for this phase. A meaningful response is determined to be either complete or partial response from the treatment in Phase 1b.

The 1 or 2 combinations of cancer types and carboplatin dosages that show the most meaningful responses from Phase 1b will be selected for the Phase 2a study. Additional patients recruited will receive the selected NOX66 and carboplatin dosage over the same treatment cycles used in Phase 1b.

A meaningful response at any stage in the Phase 1b study will be significant, given the study involves patients who no longer respond to standard treatment. Being able to restore sensitivity to chemotherapy drugs would be a significant milestone. The ability to generate a meaningful response at the lower dosage of carboplatin would be of particular significance as it would mean patients require less toxic drugs and therefore reduced side-effects, while providing life-saving therapy to late stage cancer sufferers.

#### **Radiotherapy Trials**

- NOX66 will also be trialed to determine its ability to reduce or eliminate the drug resistance of cancer tissue to radiotherapy treatment. The trials are expected to be held in Australia and overseas.
- Details of the trials are yet to be released, however they will involve the use of NOX66 combined with radiotherapy treatment in specific types of advanced cancer where multiple tumours are present and the removal of all tumours is impractical. We expect the trials to follow a similar format to the trials being conducted with chemotherapy treatment.

# **MARKET OPPORTUNITY**

- With 1 in 2 males and 1 in 3 females expected to be diagnosed with cancer throughout their lifetime, cancer provides a significant health problem for society. The incidence of cancer rises with age and with an ageing population across the globe, the number of people expected to be diagnosed with cancer is set to increase.
- Progress in cancer treatments and early detection methods has seen improved survival rates over five and ten year periods in some forms of cancer, however, there remains some cancers that have very low survival rates, such as patients with lung, liver and pancreatic cancer. Despite the improved survival rates, most aggressive cancers eventually reoccur with few treatment options available.
- The scale of the problem is reflected in the sale of oncology drugs worldwide, which is in excess of US\$100b per annum and continues to grow. In 2015, the top 10 highest selling oncology drugs (under patent) generated sales of US\$40.76b.
- There is a significant market opportunity for NOX and NOX66 to restore the response to standard treatment in late stage cancers. Beyond this, if proven effective, the drug has the potential to be incorporated in treatment plans from the beginning of treatment and not just late stage.
- In Australia the most commonly diagnosed types of cancer in 2016, estimated by Cancer Australia are tabled below. Prostate and bowel cancer are expected to be the most commonly diagnosed cancer for 2016.

Most Common Cancer Type Diagnosis 2016 in Australia (Estimated)				
Cancer Type	Number of New Cases	% of All New Cases		
Prostate	18,138	25.2%		
Bowel	17,520	13.4%		
Breast (total)	16,084	12.3%		
Breast (among females)	15,934	27.3%		
Melanoma	13,283	10.2%		
Lung	12,203	9.4%		
Total	93,162	71.4%		
All Other	130,466			

Source: Cancer Australia

Cancers have different response rates to treatment as shown by the survival rates in the below table. While some cancers have a high rate of survival such as prostate and breast cancer, lung, stomach and pancreatic cancer have very low survival rates, suggesting high drug resistance by these cancer cells.

Cancer Survival Rates (Solid Cancers)				
Cancer Type	5 Year Survival Rate Australia	5 Year Survival Rate UK	10 Year Survival Rate UK	
Bladder cancer	53.1%	53.0%	50.0%	
Bowel cancer	68.0%	59.0%	57.0%	
Brain cancer	21.6%	14.0%	19.0%	
Breast cancer	90.0%	87.0%	78.0%	
Cervical cancer	72.0%	67.0%	63.0%	
Kidney cancer	74.0%	56.0%	50.0%	
Liver cancer	16.0%	na	na	
Lung cancer	15.0%	10.0%	5.0%	
Pancreatic cancer	7.0%	3.0%	1.0%	
Prostate cancer	94.0%	85.0%	84.0%	
Stomach cancer	27.0%	19.0%	15.0%	
Testicular cancer	97.9%	98.0%	98.0%	
Thyroid cancer	95.8%	89.0%	85.0%	
Uterine cancer	83.0%	79.0%	78.0%	

Source: Cancer Australia, Cancer Research UK

# **INVESTMENT CASE**

- The market for cancer treatments is sizable with sales of oncology drugs in excess of \$100b and the market continues to grow. Outside of surgery, chemotherapy and radiotherapy are the most common forms of cancer treatment.
- An advantage that NOX66 has is that it is being developed to be used in conjunction with existing treatments and not a drug to be used to cure any one type of cancer. This further opens the potential reach of the drug.
- An investment in the company is highly speculative given the early stage of the development of NOX66. The results from the clinical initial trials which are set to commence will determine whether or not the company continues with the development of NOX66.
- A meaningful response from the clinical trails will likely result in a re-rating of the stock and will likely be a catalyst for the share price. If meaningful results are obtained from the Phase 2a study the company will be seeking to raise additional capital to further progress the development of NOX66. Given the potential market opportunity for NOX66 we do not envisage the company having any problems raising additional capital on the back of positive trials. However, we note that the capital raisings will dilute existing shareholder positions.
- NOX66 has the potential to vastly change cancer treatment and potentially expand the scope of people that can receive treatment, and significantly improve the survival rates of cancers, which are very low in some cases.

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# **CAPITAL STRUCTURE**

- At 12 November 2016, the company had 33.56m ordinary shares on issue. The company also has 41.6m ordinary shares currently in escrow and 10m performance shares. The restricted ordinary shares will be released from escrow at varying times as detailed in the below table. The performance shares will be converted to ordinary shares upon the company obtaining a market cap of \$50m by 28 February 2021.
- The company has 22.6m unlisted options on issue. All options have an exercise price of \$0.30 and an exercise date of 28 February 2021.

Shares & Options on Issue	
Fully paid ordinary shares	33,560,000
Restricted ordinary shares:	
- Escrowed until 8 January 2017	464,750
- Escrowed until 1 April 2017	4,261,241
- Escrowed until 9 August 2018	36,885,465
Performance Shares	10,000,000
Options	22,585,716

 Dr. Kelly is the largest shareholder in the company with 32.1% of the ordinary shares on issue.

Top Five Shareholders				
Shareholder	Number of Shares (M)	Percentage of Shares on Issue (%)*		
Graham and Prue Kelly Family Trust	24.2	32.1%		
DRH Superannuation Pty Ltd	5.5	7.3%		
Anglo Menda Pty Ltd	4.8	6.4%		
HSBC Custody Nominees Ltd	1.5	2.5%		
Aquagolf Pty Ltd	1.4	1.9%		

Includes trade and restricted ordinary shares on issue.

# **RISKS**

**Patent Protection**: The company has applied for patent protection for the NOX66 formulation. While we expect the company to be awarded with the patents, there is the risk that the applications will be unsuccessful resulting in the company's IP not being protected.

**Loss of Key Personnel:** Given the company is in the early stages of developing the product, the loss of any of the key personnel would have an adverse impact on the progress of the company and drug development. In particular, the loss of the Managing Director, Dr. Kelly, would be a significant loss for the company.

**Market Risk:** The development and use of non-cytotoxic treatments is increasing, with the 9 out of the 10 highest selling cancer treatments in 2013 being non-cytotoxic drugs. In the event this trend continues, this will likely reduce the market size and opportunity for NOX66. We note that to date these new treatments typically have not provided any significant long-term benefit for many cancers.

**Unsuccessful Clinical Trials:** In the event the clinical trials do not show sufficient results to continue to progress NOX66, the company will have to raise more money for additional research or change its focus. Either way, the company would be in a precarious position if this outcome was to occur.

**Dilution Risk:** NOX is in the early stages of developing NOX66, it's one and only drug at present. The company has raised capital to complete the impending clinical trials, however, in the event the results show a significant response rate to treatment, the company will have to raise further capital to progress the drug to market. This will likely result in the dilution to existing shareholders positions.

**BOARD AND MANAGEMENT** 

**Peter Marks - Non-Executive Chairman:** Mr. Marks has over 30 years experience in corporate advisory, investment banking and advisory roles. Mr. Marks has been involved in a range of transactions, specialising in life sciences, biotechnology, medical technology and technology sectors. Mr. Marks is currently a Director of Prana Biotechnology Ltd (ASX: PBT) and Emefcy Group Limited (ASX: EMC) and Chairman of Armadale Capital Plc.

Mr. Marks provides experience in strategic and corporate advice at various stages of technology commercialisation for companies to transition to an operating entity will be important for the company.

**Dr. Graham Kelly - Managing Director & CEO:** Dr. Kelly has been a Senior Research Fellow in Experimental Surgery at the University of Sydney, undertaking research in the areas of organ recovery for transplant surgery, followed by researching the link between diet and the incidences of cancer. Dr. Kelly left the University of Sydney and founded Norvet Ltd to continue his research. Norvet listed on the ASX in 1994 and subsequently changed its name to Novogen Limited and listed on the NASDAQ in 1998. Dr. Kelly held various senior executive and director positions at Novogen from 1994 to 2006, over which time the company's share price on the ASX hit a high of \$6.39.

In 2011, Dr. Kelly joined Triaxial Pharmaceuticals Pty Ltd, a private biotechnology company, as Executive Chairman. Dr. Kelly engineered a reverse takeover of Novogen by Triaxial in 2012 and set about rebuilding the company, which had been in a steep decline since Dr. Kelly left.

During 2012, Dr. Kelly conducted private formulation studies around the transport of isoflavones in the human blood stream, which led to the development of the NOX66 formulation. In 2015, Mr. Kelly left the restructured Novogen and established NOX to commercialise NOX66.

**Dr. Ian Dixon - Non-Executive Director:** Dr. Dixon is a qualified mechanical engineer, electronics engineer and has a PHD in biomedical engineering. Dr. Dixon established his first business in 1987 in the telecommunications field, and grew successfully grew an export oriented manufacturing business and R&D business in subsequent years. In 1995, Dr. Dixon joined Vision Systems as Director of the Product Group within the Invetech business unit, and was responsible for managing the team responsible for the development of innovative diagnostic, pathology automation and security system products.

Dr. Dixon co-founded Genscreen Pty Ltd in 2002, a biotechnology incubator with a focus on cancer therapeutics. Genscreen developed a anticancer drug which was licenced to Novogen in 2013. During this time, Dr. Dixon was a Director of Cell Therapies Ltd, which was concerned with regenerative medicine and cancer immunotherapy research. In 2011, Dr. Dixon co-founded Cynata Inc and assisted with the commercialisation of the Cymerus Technology of Cynata Therapeutics Ltd (ASX: CYP).

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