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## ASX: NOX

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## BRAIN CANCER STUDY COMMENCES

Sydney, 1 February: Noxopharm announces that it has entered into a research agreement with the University of Hong Kong to conduct research into the use of the drug idronoxil (NOX66 active ingredient) to treat brain cancer.

In parallel to the NOX66 clinical program currently being rolled out, the Company has an extensive R&D program in place. This program involves a number of previously undisclosed oncology and non-oncology pre-clinical activities, all intended to add to the Company's drug development pipeline. The Company previously has said that it will provide details of those R&D activities as confidentiality issues and patent lodgements allow. This is the first of those notifications.

The Hong Kong-based research activity has the objective of bringing idronoxil into the clinic for the treatment of both primary brain cancers (cancers arising within the brain) and secondary brain cancers (cancers arising outside of the brain and spreading to the brain). Such treatment of patients is made possible by the recent breakthrough in being able to get idronoxil to cross the blood-brain barrier and to enter the brain at high levels, as demonstrated in rats.

The collaboration with the university's Faculty of Medicine aims to confirm the ability of idronoxil formulated as NOX66 to sensitise brain cancer cells to the chemotherapy drug temozolomide (TMZ). The eventual objective is to demonstrate that use of NOX66 will lead to significantly higher response rates to TMZ in both adult and paediatric brain cancers.

Malignant brain cancers remain one of the handful of cancer types that have shown virtually no change in overall survival outlook over the past 50 years. The need for precision therapy in light of the vital nature of the brain puts limitations on surgery and radiotherapy that generally don't apply to other parts of the body, plus the mammalian blood-brain barrier ensures that the great majority of chemotherapy drugs are excluded from reaching the brain at effective levels. Of the 100-plus chemotherapy drugs available to oncologists, only 5 cross the blood-brain barrier and these form the backbone of chemotherapy of malignant brain cancers, with temozolomide the primary drug used. However, these drugs are poorly effective overall. For the main primary brain cancer in adults (glioblastoma), only 1 in 5 patients show any meaningful response, with that response typically being limited to several months. The results are even poorer with paediatric malignant brain cancers, along with adult secondary brain cancers (such as breast and lung cancer and melanoma). Malignant brain cancer remains a major frontier for drug development.

Noxopharm CEO, Graham Kelly, said, “The recent discovery that our NOX66 delivery technology delivers idronoxil into the rat brain at high levels gives us confidence that we can achieve the same thing in humans. That wasn’t possible with idronoxil in the past and we put it down to the extensive Phase 2 metabolism of the drug in the body. By blocking Phase 2 metabolism, the drug now is able to cross into the brain. This provides us now with a unique opportunity to increase the sensitivity of brain cancer cells to chemotherapy and radiotherapy, either singly or in combination, hopefully leading to far more meaningful treatment options than currently available for patients with aggressive brain cancers.”

Idronoxil has proven to be highly effective in the laboratory in sensitising cancer cells, including brain cancer cells, to a wide range of standard chemotherapy drugs. The level of sensitisation for most of those drugs is highly potent (in the order of > 2000x). This study will test for the first time the ability of idronoxil to sensitise TMZ, with the Company anticipating a high level of sensitisation.

The pre-clinical study, including animal studies involving human brain cancer xenografts, is planned to run for 12 months and if successful to lead in 2018 to a Phase 1 study in combination with TMZ in patients with glioblastoma multiforme.

The collaboration is being run through Noxopharm Asia Limited, a wholly-owned subsidiary of Noxopharm Limited, which is registered in Hong Kong and providing the Company with a presence in Asia for clinical research and future commercialisation activities.

#### **About NOX66**

NOX66 is an innovative dosage formulation of the experimental anti-cancer drug, idronoxil, developed specifically to protect idronoxil from being inactivated in the human body by Phase 2 metabolism. The purpose is to ensure that most idronoxil administered remains in an active form rather than as inactive Phase 2 metabolites.

Idronoxil works by cancelling mechanisms (such as PARP1/Akt) in cancer cells that allow those cells to resist the killing effects of chemotherapies and radiotherapy. Idronoxil targets an external NADH oxidase, ENOX 2, responsible for maintaining the transmembrane electron potential (TMEP) in the plasma membrane. Inhibition of this enzyme causes loss of TMEP and disruption of key downstream pro-survival mechanisms including PARP1/Akt/PI3 kinase. ENOX2 is an oncogene whose expression is restricted to cancer cells.

#### **About Noxopharm**

Noxopharm is an Australian drug development company with offices in Sydney and Melbourne. The Company has a primary focus on the development of drugs to address the problem of drug-resistance in cancer cells, the major hurdle facing improved survival prospects for cancer patients. NOX66 is the first pipeline product, with later generation drug candidates under development in an R&D program.

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#### **Forward Looking Statements**

This announcement may contain forward-looking statements. You can identify these statements by the fact they use words such as “aim”, “anticipate”, “assume”, “believe”, “continue”, “could”, “estimate”, “expect”, “intend”, “may”, “plan”, “predict”, “project”, “plan”, “should”, “target”, “will” or “would” or the negative of such terms or other similar expressions. Forward-looking statements

are based on estimates, projections and assumptions made by Noxopharm about circumstances and events that have not yet taken place. Although Noxopharm believes the forward-looking statements to be reasonable, they are not certain. Forward-looking statements involve known and unknown risks, uncertainties and other factors that are in some cases beyond the Company's control that could cause the actual results, performance or achievements to differ materially from those expressed or implied by the forward-looking statement. No representation, warranty or assurance (express or implied) is given or made by Noxopharm that the forward-looking statements contained in this announcement are accurate and undue reliance should not be placed upon such statements.