



**Date: 18 October 2019**

**Sydney, Australia**

ASX Limited  
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### **Potential for Fundamental Change in the Treatment of Brain Cancer**

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- Noxopharm commences a research program pursuing a novel approach to the treatment of glioblastoma multiforme (GBM), the most common and aggressive form of brain cancer
  - Based on recent international research showing key role of the brain chemical, glutamate, in driving aggressive growth of GBM
  - Noxopharm owns what it believes to be world-leading technology in glutamate-inhibition
  - Major opportunity to slow GBM growth and help preserve normal brain function
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**Sydney, 18 October 2019:** Noxopharm (ASX: NOX) announces that it will apply its glutamate-inhibition technology to the treatment of glioblastoma multiforme (GBM).

GBM remains a poorly managed cancer, with surgery, radiotherapy and the chemotherapy drug, temozolomide, the current standard of care, offering median survival of only 12-15 months.

Recent research now has confirmed that brain chemical, glutamate, is playing a key role in driving the aggressive nature of GBM growth.<sup>1,2</sup>

Glutamate is an important brain chemical, triggering passage of electrical impulses between brain cells. These chemicals are known as neurotransmitters. Glutamate is the brain's main neurotransmitter, with important roles in learning and memory.

GBM cancer cells now have been shown to be connected to brain cells (neurons) that are feeding glutamate into the tumour, driving growth of the cancer cells.<sup>1</sup>

As a result of a collaboration with UNSW Sydney in 2016, Noxopharm already has drugs in its chemical library that are selective glutamate-inhibitors. This proprietary intellectual property centred on a search for a drug capable of protecting the brain from glutamate-associated brain damage following a stroke or severe concussion.



Noxopharm already has a number of potential lead candidates, which puts it well-placed to expedite the path to the clinic.

Dr Graham Kelly, Noxopharm Executive Chairman, said, “This is an exciting opportunity that we believe we lead the world on. It’s early stage with many questions yet to be answered, but if we are successful, then we see this approach as potentially having the same benefit as blocking the way sex hormones drive the growth of breast cancer and prostate cancer. If anti-hormone therapy can deliver very significant survival benefits with highly aggressive forms of breast cancer and prostate cancer, then we see no reason why blocking glutamate function cannot deliver the same benefit for patients with GBM.”

“A key challenge will be to limit a glutamate-blocking effect just to the tumour. A drug that blocks glutamate function in the brain generally would be far too toxic. Our compounds appear to work specifically where there is glutamate over-dose and have been well tolerated in animals to date. This is what we believe gives us a major competitive edge in what seems likely to be a major new area of drug development.”

The Company’s primary focus remains on Veyonda® and bringing it through the clinic and to market for the treatment of late-stage prostate cancer using its DARRT and LuPIN treatment regimens. The glutamate-inhibition program becomes the Company’s second pipeline drug program but will be secondary to the Veyonda® program.

References:

1. Venkataramani V et al (2019) Nature 573, 532-538.
2. Ye ZC, Sontheimer H. (1999) Cancer Res 59, 4383-4391.

**About GBM**

Glioblastoma multiforme (GBM) is the most common and most aggressive of the primary brain tumors. Patients with GBM present with symptoms such as headache and seizure often late in the disease when the tumour has become well-established and inoperable. As a result, the median survival is very short at about 12 months.

**About Glutamate**

Glutamate (glutamic acid) is a neurotransmitter that brain cells use to pass signals, including electrical impulses, between cells. It is important in learning and memory and is the dominant neurotransmitter in the brain and spinal cord. Glutamate works by increasing the entry of ions such as calcium into receiving nerve cells. Excessive amounts of glutamate lead to toxic amounts of calcium entering the cell, resulting in over-stimulation and death of healthy brain cells in a process known as excitotoxicity.

**About Noxopharm**

Noxopharm is a clinical-stage Australian drug development company with offices in Sydney and New York. The Company has a primary focus on the development of Veyonda® and is the major shareholder in Nyrada Inc, a spin-off company developing a pipeline of non-oncology drugs.



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