

**ASX:NRT**  
**NASDAQ:NVGN**

Novogen Ltd  
(Company)

ABN 37 063 259 754

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### Capital Structure

Ordinary Shares on  
issue:

354 M

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### Board of Directors

**Dr Graham Kelly**  
Chairman &  
Executive Director

**Steve Coffey**  
Non Executive Director

**John O'Connor**  
Non Executive Director

**Prof Peter Gunning**  
Non Executive Director

### ASX RELEASE

8 May 2015

## AUSTRALIAN STUDIES CONFIRM TRXE-009 KILLS RESISTANT PAEDIATRIC BRAIN CANCER CELLS

- **DIPG cells respond to TRXE-009 in vitro**
- **DIPG is one of the most difficult cancers to treat**

**May 8 2015, San Diego, USA:** US-Australian drug discovery company, Novogen Limited (ASX:NRT; NASDAQ:NVGN), in conjunction with Australian paediatric cancer researchers, released key pre-clinical data on experimental cancer drug-candidate, TRXE-009, confirming its potential to become an important new therapy against an incurable paediatric brain cancer called DIPG (diffuse intrinsic pontine glioma). The data was presented by David Ziegler MD PhD and Anne Kankean PhD of the University of New South Wales/Children's Cancer Institute at the 3rd Biennial Conference on Pediatric Neuro-Oncology Basic and Translational Research in San Diego, 7-8 May 2015.

DIPG has a very poor prognosis with a median survival of less than one year, a statistic that has not changed in over 50 years. DIPG is amongst the most challenging cancers to treat; the diffuse nature of the cancer means that surgery is not an option, radiation provides only temporary relief, and chemotherapy has yet to provide any clinical benefit.

The latest study looked at the ability of TRXE-009 to kill freshly established patient-derived cell cultures collected from patients with DIPG. The studies indicate that TRXE-009 kills DIPG cells at therapeutically relevant concentrations by inducing a specific type of cell death -

caspase-dependent apoptosis. In contrast to its pronounced effect on DIPG cancer cells, normal brain astrocytes are affected only at much higher concentrations of TRXE-009, confirming data seen with other cancer cell types that TRXE-009 has a high therapeutic index and is able to target cancer cells at concentrations that have little effect on normal cells.

Lead Investigator David Ziegler said, "These are preliminary studies but we are very excited about the striking activity we are seeing in these highly resistant tumorspheres. TRXE-009 is one of the most potent compounds we have studied to date in this setting."

Novogen Trilexium Program Manager, Eleanor Ager, PhD said, "These findings add to our other pre-clinical studies suggesting that TRXE-009 has particular activity against brain cancers, including being highly cytotoxic against the main adult brain cancer, glioblastoma multiforme (GBM). The next step in this drug's development is to confirm its ability to cross the blood-brain barrier, a key filtering system that blocks the majority of chemotherapeutic drugs from reaching brain tissue".

TRXE-009 has been designed to cross the blood-brain barrier, but Novogen has further enlisted the combined efforts of several international research groups to identify the optimal means of delivering TRXE-009 to adults and children so that it crosses the blood-brain barrier.

Novogen Group Chief Executive Officer Graham Kelly, PhD said, "DIPG is a devastating disease for affected children and their parents alike. I don't want parents to think that this battle is won, because we have yet to make sure we can deliver this drug candidate at levels that that will make a difference. But what is important is to give parents of children with DIPG hope, and that is what this news hopefully does."

"TRXE-009 is an exciting prospect. It is broadly active against a wide range of cancers in the laboratory, including cancer stem cells, and on the basis of it delivering a potent anti-cancer effect in animals bearing human melanoma, we are bringing into the clinic in 2016 for the treatment of solid cancers. But in addition to a general anti-cancer use, the ultimate objective is to see it tested in adults and children with brain cancers, and people with secondary brain cancer associated with cancers such as melanoma."

### **About TRXE-009**

TRXE-009 is a super-benzopyran compound that demonstrates cytotoxicity against cancer cells, but particularly activity against cancer cells with stem-cell like activity. The molecular target is undefined for this molecule, but is believed to be in common with other members of this family of compounds in blocking trans-membrane electron transfer mechanisms, leading to caspase-induced apoptosis. TRXE-009 is a product of the Company's VAL-ID (Versatile Approach to Library-based Iterative Design) drug discovery process, with a structure-activity relationship driving design based on activity against brain cancer stem cells and the known required chemical criteria to facilitate passage across the blood-brain barrier.

### **About Trilexium**

Trilexium is the name given to a proprietary parenteral formulation of TRXE-009 selected for its ability to maximize systemic drug delivery and effectiveness in pre-clinical rodent models of human cancer.

### **About Novogen**

Novogen is a public, Australian-US drug development company whose shares trade on both The Australian Securities Exchange (NRT) and NASDAQ (NVGN). The Novogen group includes US-based, CanTx Inc, a joint venture company with Yale University. Novogen has two drug technology platforms yielding drug candidates that are first-in-class with potential application across a broad range of degenerative diseases. In the oncology field, the ultimate objective is to see both drug technologies used in combination as first-line therapy across most forms of cancer, with the objective of preventing tumor recurrence. This objective is based on a strategy of achieving comprehensive destruction of the full hierarchy of cells within a tumor with the super-benzopyran technology platform killing the tumor-initiating cells and the anti-tropomyosin technology, combined with vinca alkaloids, to deliver a potent chemical debulking effect on their daughter cells.

For more information, please visit [www.novogen.com](http://www.novogen.com)



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