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**ASX RELEASE**

### **CS-6 Highly Active Against Ovarian Cancer Stem Cells**

Novogen announces today the results of an important study concerning its lead experimental drug, CS-6.

The study was conducted by, Mazor Oncology, a spin-off company of Yale University with particular expertise in cancer stem cells and in assessing the likely clinical potential of new anti-cancer drugs.

The study was designed to test the ability of the experimental anti-cancer drug, CS-6, to kill ovarian cancer stem cells.

Cancer stem cells have been identified in a range of cancers including gut, skin, ovarian and brain cancers and leukaemia. Cancer stem cells are almost completely resistant to radiotherapy and standard anti-cancer drugs.

Although representing less than about 1% of all cells present in these cancers, they are thought to be the cause of cancer relapse following radiotherapy and chemotherapy where the bulk of the tumour is replaced with new highly-resistant cells derived from the cancer stem cells.

In laboratory studies, CS-6 has shown potent anti-cancer activity against cancer cells representative of a broad range of malignancies including ovarian cancer and glioma (brain) cancer, but it was important to extend this to see whether the drug also would be effective against cancer stem cells. Such dual activity, unknown in all currently approved drugs and very rare among experimental drugs, would mark CS-6 as having significant potential as a comprehensive chemotherapy, targeting both the minority cancer stem cell as well as the majority non-stem cells.

Studies performed in the laboratory of Dr. Gil Mor at Yale University have identified and characterized ovarian cancer stem cells as the source of ovarian cancer recurrence. Targeting these cells, therefore, represent a critical approach to prevent recurrence, the main cause of mortality in patients with ovarian cancer. In laboratory tests conducted since Novogen acquired its new Triaxial drug technology, CS-6 has proved highly effective at stopping the growth of these cancer stem cells, eventually causing them to die.

Dr Mor said today, "ovarian cancer stem cells are among the toughest cancer cells to kill. Standard chemotherapies have no effect on them, so finding a compound such as CS-6 with the capacity to target these highly chemo-resistant cells is very exiting. "

The initial studies performed by Mazor Oncology show a highly effective

cytotoxic effect on ovarian cancer stem cells, at low concentrations and within a short period of time.

Dr Andrew Heaton, Novogen Chief Scientific Officer said, "when we designed CS-6, we built into it years of experience in benzopyran anti-cancer drug design. We expected it to be a highly potent drug across almost all forms of cancer, but seeing its anti-cancer activity extended beyond the regular cancer cell to the originating cancer stem cells has exceeded my expectations as a drug designer."

Professor Graham Kelly, Novogen CEO, said, "our primary goal remains to develop CS-6 as a treatment for glioblastoma multiforme, the main form of brain cancer. Today's news raises two important matters. The first is that it shows that we have the opportunity to develop CS-6 against ovarian cancer, which like GBM, is another deadly disease for which an effective long-term therapy is yet to be found. The second matter is the hope that CS-6 might also be effective against the cancer stem cells that we know exist in brain cancer."

Professor Kelly added, "it is important to point out that this is early days and we have some way to go before we will have clinical evidence, but there is no doubt that this news elevates CS-6 and the super-benzopyran family of drugs to which it belongs into an entirely new clinical dimension where we hope it will be possible to provide a comprehensive cancer treatment."

### **About Novogen**

Novogen Ltd is a public Australian biotechnology company whose shares trade on both the Australian Stock Exchange (symbol 'NRT') and NASDAQ (symbol 'NVGN'). The Company is based in Sydney, Australia and is focused on the development of a family of novel anti-cancer drugs based on super-benzopyran and 'stealth' drug technologies. The Company's inaugural drug candidate is CS-6.

### **About CS-6**

CS-6 belongs to a new class of drug candidates known (structurally) as super-benzopyrans displaying potent anti-cancer activity and demonstrating increased bio-availability to cancer cells ('stealth' technology). CS-6 shows broad anti-proliferative and cytotoxic activity against human cancer cells, with particular activity against human glioblastoma cells. CS-6 also has been designed deliberately to meet the major known criteria for crossing the blood-brain barrier, and for that reason is being developed as a first-line for the treatment of glioblastoma multiforme, the main form of primary brain cancer.

### **Further information**

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