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Singapore: Cantrixil, a first-in-class experimental chemotherapeutic, developed by Australia/US-based biotech firm Novogenis, is due to enter a first-in-man clinical study in 2015.

Cantrixil is a cytotoxic chemotherapy to be developed specifically for injection into the body's cavities. The peritoneal and pleural cavities are involved in a large proportion of cancers, and yet the vast majority of chemotherapies continue to be administered in a way that delivers chemotherapies to the cancer via the bloodstream.

Delivering the drug directly into the cavity where the cancer is spreading ensures cancer cells are exposed to levels of drug some hundreds of times greater than via the blood.

Cantrixil has been developed jointly by Novogen and Yale University and is owned by their joint-venture company, CanTx Inc.

Cantrixil is a construct of active drug candidate, TRXE-002, in a cyclodextrin shell. On injection into the cavity, the shell dissolves to release the active drug. Cantrixil has been designed to be non-irritant and to not be dose-limiting due to side-effects.

Dr Graham Kelly, CEO, Novogen and CanTx, explained that, "The outstanding feature of Cantrixil is its ability to kill the full range of cancer cells within a tumour. If we are to make any meaningful progress in the survival prospects of patients with cancers such as those of the ovary, uterus, oesophagus, stomach, appendix, large bowel, pancreas and lung, then we have to find a way of killing the cancer stem cells that maintain the cancer."

TRXE-002 is the first drug candidate to emerge from the Novogen super-benzopyran drug platform that for the first time kills all forms of cancer cells through a common mechanism. The platform does not rely on a targeted therapeutic approach of identifying a cancer stem cell market, a strategy that carries the risk of the cancer cell developing detours around the blocked target.

Cantrixil is set to come into the clinic in Australian hospitals in the first instance, followed by the US centers. The Phase 1 study will be enrolling patients with a variety of cancers that either have arisen in the abdomen or have metastasised there and which have become unresponsive to therapy.