

LithCTx - Combination drug therapy to prevent esophageal and lung cancers and cancer recurrence

VALUE PROPOSITION

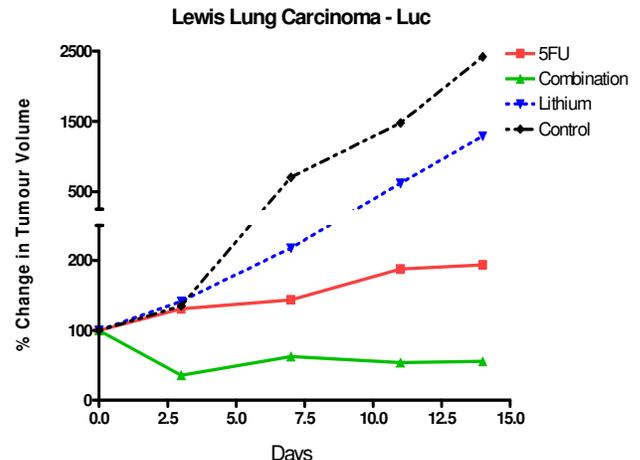
A combination drug treatment comprising a chemotherapeutic drug and an autophagy inducing drug results in not only inhibition in the progression of cancer but also prevents the recurrence of cancer which may occur following withdrawal from a typical anti-cancer regime. A combination of 5-FU and LiCl treatment, for example, eliminates recovering cancer cells. The treatment overcomes drug resistance and results in chemoresistant cancer cells being killed by means of Type II cell death mechanism. The acceleration of autophagy beyond a survival process, into 'autophagic' cell death is a new therapeutic approach to treating cancer.

THE TECHNOLOGY

The invention is based on the surprising finding that treatment of cancer with lithium (i.e. autophagy inducer) in combination with standard chemotherapeutic agents such as 5-fluorouracil (5-FU) effectively inhibits the continued growth of cancer cells as well as preventing cancer recurrence following drug withdrawal.

In vivo, drug resistance from a failure to adequately engage in 'apoptotic' programmed cell death leads to a recurrence of cancer, and tumours can remain dormant for periods of time before re-emerging as drug resistant metastases.

LiCl is a known autophagy inducer and accelerates cell survival to an 'autophagic' programmed cell death. The combination of an autophagy inducer and a chemotherapeutic agent prevented the recovery of apoptosis competent and apoptosis incompetent cancer cells.



Antitumour effect of combination therapy of 5-FU and Lithium Chloride on Lewis lung carcinoma derived tumours in a MF1 nu/nu murine model

STATUS/ DEVELOPMENT OBJECTIVES

- Pre-clinical studies complete
- Phase 1 Clinical Trial to commence in summer 2015

FIELDS OF APPLICATION

- Cancer Treatment:
 Esophageal cancer
 Lung cancer

FUNDING



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