

Autophagy Induction Treatment – preventing cancer cell survival

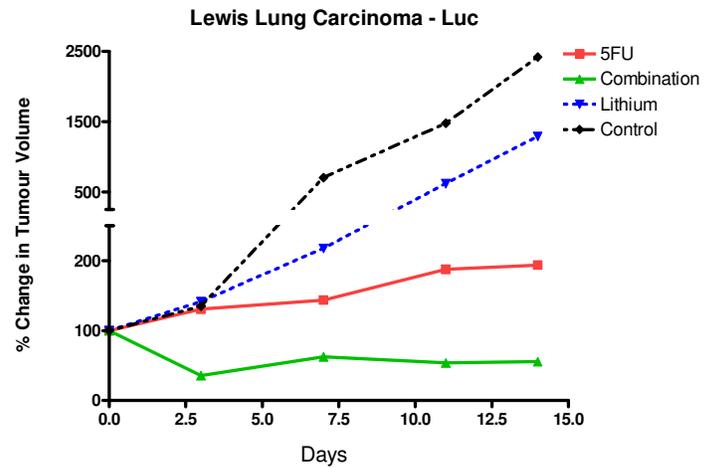
VALUE PROPOSITION

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. 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 with a chemotherapeutic agent such as 5-fluorouracil (5-FU) and an autophagy inducer effectively inhibit the continued growth of, and prevent the recovery following drug withdrawal, of cancer cells. *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 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

DEVELOPMENT OBJECTIVES

- Clinical development of combination drug therapy for the treatment of esophageal and lung cancers

FIELDS OF APPLICATION

- Cancer Treatment:
 Esophageal cancer
 Lung cancer

FUNDING



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