NEW THERAPEUTIC APPROACH TO TREAT CANCER

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Technology description

SOCPRA is seeking a company wishing to participate in the preclinical development of a new therapeutic approach to treat cancer. The approach uses selective inhibitors of proprotein convertases (PCs) as effective antiproliferative agents. Cancers derives from various tissues with multiples aetiologies and their progression results from a combination of genetic and epigenetic alterations. Although there is a high heterogeneity, there are a limited number of events by which convergence leads to cancer proliferation. Identification of these points of convergence provides new and greater efficiency of therapeutic targets.

Indeed, recent studies have linked the proprotein convertases (PCs) family as such convergence point. PACE4, as well as other widespread PCs like furin, were associated with malignant tumours and tumour progression by their ability to activate a wide range of cancer associated proteins. Thus, the inhibition of some of these PCs represents a new therapeutic approach for treating various cancers, such as prostate cancer, one of the most common types of human cancers.

TECHNOLOGY

Research conducted by Professor Robert Day and his team have shown that PACE4, one of the seven know PCs, is specifically over expressed in prostate cancer. Targeting PACE4 with a molecular approach using specific enzyme inhibitors has led to a significant reduction of tumours, as well as inducing apoptosis in treated cancer cells. Specific inhibitors against PCs have been developed with a specific inhibitor for PACE4.

INHIBITION OF PACE4 RESULTS IN SIGNIFICANT AND DRASTIC REDUCTION OF TUMOR MASS

Nude mice used in this proof of concept were implanted with DU145 prostate cancer cells. PACE4 molecular inhibition or DU145 cells treatment with PACE4 selective inhibitors resulted in a drastic reduction of the tumor volumes. The PACE4 inhibition also resulted in a dual effect: reduction of cell proliferation and triggering of apoptosis in cancer cells.

Institution

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