Technology Licensing Opportunity

Non-Confidential Summary

G31P – A HIGHLY EFFECTIVE TUMOUR METASTASIS BLOCKER
ROI# 10-031

Technology:

An immunotherapeutic, anti-inflammatory peptide which dramatically reduces tumour growth and metastasis in multiple cancer models, including prostate, pancreatic, hepatic and melanoma

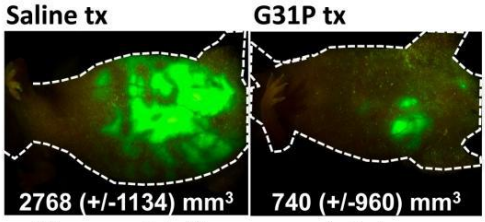
Market:

The global cancer therapies market is currently US $75 billion and expected to reach US $225 billion by 2017 with immunotherapies representing the largest market segment.

ELR-CXC chemokines such as CXCL1, CXCL6, or CXCL8 are secreted by a variety of human tumor cells and are involved in a number of important tumor-related biological processes, including tumor formation, development, and responses to chemotherapy. ELR-CXC chemokines bind to one or both G-coupled protein receptors (GPCRs) CXCR1 and CXCR2 which are expressed at high levels in many tumour cells including melanoma, adenocarcinoma and prostate cancer cells. In each case these receptors contribute to tumour growth, metastasis and angiogenesis. Thus, development of an effective combined CXCR1/CXCR2 antagonist would have significant promise as a cancer treatment.

Innovations:

The inventors have generated a CXCL8-based high affinity antagonist of the ELR-CXC chemokines, (**G31P** peptide) which dramatically reduces tumour growth, metastasis and angiogenesis in mouse models of prostate cancer, hepatic adenocarcimnoma and melanoma. They have also demonstrated *in vitro* its impact on a number of tumor cell parameters, including chemokine-driven tumour cell proliferation. Evidence indicates that, unlike other CXCR1/CXCR2 under development, G31P blocks both these G protein-coupled receptors (GPCR), but also those for heterologous inflammatory GPCR ligands (e.g., C5a), thereby dramatically expanding its efficacy as an anti-inflammatory agent The use of G31P as a cancer treatment is comprehensively covered by patent claims.



Mouse model of human prostatic tumour growth & metastasis. Tumour volumes calculated by image analyses (p=0.022; n=6)

The figure depicts whole body fluorescent imaging of GFP-expressing human PC3 prostate tumour-bearing nude mice that were treated every second day after challenge with either saline or G31P (500 µg/kg; i.p.).

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Researcher profile:

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Professor, Division of Respirology & Critical Care Medicine
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Research interests: allergy/asthma, regulation of immune responses, and therapeutic amelioration of neutrophilic inflammation, in both humans and veterinary species

Patent Status:
US Patent: 13/048,290
WIPO Patent: PCT/CA2012/050139

Development Stage:
Animal studies completed & working prototype

Select Publications:

Zhao X, Town JR, Li F, Zhang X, Cockcroft DW, Gordon JR. ELR-CXC chemokine receptor antagonism targets inflammatory responses at multiple levels. J Immunol 2009;182:3213–22.

Xin Liu, Jing Peng, Wenchang Sun, Shufeng Yang, Guoying Deng, Fang Li, Jya-Wei Cheng and John R. Gordon. G31P, an Antagonist against CXC Chemokine Receptors 1 and 2, Inhibits Growth of Human Prostate Cancer Cells in Nude Mice. Tohoku J. Exp. Med., 2012, 228, in press

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