



## **Immutep Announces IND Allowance in Pancreatic Cancer**

### ***A Phase I clinical trial of ImmuFact IMP321 in pancreatic cancer will be carried out at Washington University in Saint Louis (MO)***

**Orsay, October 16, 2008** - Immutep S.A. announced today that the FDA, after review of the Investigational New Drug Application (IND), has allowed the administration of IMP321 in cancer patients in a Phase I trial conducted by Dr. William G. Hawkins at the Washington University School of Medicine in Saint Louis (MO).

IMP321 is a first-in-class immunopotentiator that agonizes MHC class II molecules thereby stimulating antigen-presenting cells (APC), such as dendritic cells and monocytes, leading to markedly improved cytotoxic CD8 T cells responses against tumours in patients with metastatic kidney or breast cancer. More than 500 s.c. injections have been administered to date at doses up to 30 mg.

The phase I study is an open-label, two-arm, dose escalation trial in advanced pancreatic cancer treated by first-line gemcitabine alone or associated with increasing doses of IMP321. Investigators will assess the safety and tolerability of this new chemo-immunotherapy combination protocol. The other points to be studied include IMP321's pharmacokinetics, pharmacodynamics and immunogenicity, as well as the exploration of the molecule's mechanism of action. IMP321 will be given s.c. q14 for a 6-month period the day after gemcitabine injection, with an option for additional months of therapy if disease improvement or stabilization is observed. The first two dose levels will be 3 and 6.5 mg followed by 13 and 26 mg if safety at higher doses is confirmed. At least 27 patients are expected to be enrolled.

"We are very pleased to start this trial in advanced pancreatic cancer patients which should provide information about the potency of IMP321 as an add-on immunostimulant for the induction of CD8 T cell responses in our patients," said William G. Hawkins, PI and sponsor of this study. "Cancer of the pancreas carries an ominous prognosis and progress would not be possible without the valuable support and collaboration provided by the Gateway for Cancer Research, Immutep and the Siteman Cancer Center."

"Boosting the dendritic cell network when it is loaded with tumour antigens for the several days following chemotherapy (following tumour cell apoptosis) with repeated s.c. injections of the APC-specific activator IMP321 is a simple and effective way to boost the cytotoxic CD8 T cell responses observed in many patients treated with first-line chemotherapy," said Frédéric Triebel, Scientific & Medical Director of Immutep. "A similar approach is being tested in a multi-centre trial in Europe in metastatic breast cancer patients receiving first-line paclitaxel."

Immutep's lead product is ImmuFact<sup>®</sup> IMP321, a potent natural human immunostimulatory factor designed to amplify the T cell immune response. IMP321 can be used either as an immunopotentiator in therapeutic vaccines or alone at higher doses as a monotherapy or in combination with chemotherapy. Six clinical trials have been initiated with ImmuFact IMP321 in the last four years.

For further information please visit the web-site [www.immutep.com](http://www.immutep.com). Patients interested in joining the pre-screening process for participating in the trial should contact the Siteman Cancer Center on +1 877 251 6485 (toll free in US) or +1 314 747 3046.

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Notes to Editors

### **The Washington University School of Medicine, Saint Louis, MO**

Washington University School of Medicine's 2,100 employed and volunteer faculty physicians also are the medical staff of Barnes-Jewish and St. Louis Children's hospitals. The School of Medicine is one of the leading medical research, teaching and patient care institutions in the nation, currently ranked third in the nation by *U.S. News & World Report*. Through its affiliations with Barnes-Jewish and St. Louis Children's hospitals, the School of Medicine is linked to BJC HealthCare.

### **Dr William G. Hawkins**

Dr Hawkins is the Assistant Professor of Surgery in the Hepatobiliary Pancreatic and Gastrointestinal Surgery Section. His specialty areas are complex cancer surgery for primary and metastatic lesions of the liver, pancreas and stomach and surgical management of soft-tissue sarcomas of the abdomen and extremities. He was educated at the State University of New York Medical School at Stony Brook followed by a Surgical Research Fellowship at Memorial Sloan-Kettering Cancer Center New York, N.Y., residency at Massachusetts General Hospital, and a Surgical Oncology Fellowship at Memorial Sloan-Kettering Cancer Center, New York, N.Y.

### **Immutep S.A.**

Immutep S.A. is a biopharmaceutical company developing immunostimulatory factors for the treatment of cancer and chronic infectious diseases and immunomodulatory therapeutic antibodies for the treatment of cancer or autoimmune disease. The Company's technologies are based on the LAG-3 immune control mechanism that mediates T cell immune responses.

### **The LAG-3 immune control mechanism**

The lymphocyte activation gene-3 (LAG-3 or CD223) protein binds to the MHC class II molecule which is at the centre of immune response induction. The LAG-3 immune control mechanism plays a role in the upregulation of the immune system through the activation of MHC class II\* antigen presenting cells like dendritic cells and monocytes leading to the expansion of activated CD8 T cells.

### **ImmuFact<sup>®</sup> - T cell Immunostimulatory Factors for amplifying the T cell response**

The lead product, ImmuFact<sup>®</sup> IMP321, is a highly potent T cell immunostimulatory factor. It is a soluble form of LAG-3 that binds, with high affinity, to MHC class II molecules expressed by dendritic cells (DC) and monocytes. This binding leads to DC maturation, migration to the lymph nodes and enhanced cross-presentation of antigens to T cells. As a result, strong and sustained anti-tumour or anti-viral cytotoxic T cell responses are obtained.

### **Clinical Development**

Immutep has completed two randomised single-blind escalating-dose Phase I studies in 108 healthy individuals with IMP321 alone and combined with two well-defined standard types of antigens to show safety of the product alone and as an adjuvant in therapeutic vaccines. Four new Phase I/II clinical trials are in progress: in metastatic renal cell carcinoma with IMP321 injected alone, in metastatic breast cancer combining IMP321 with paclitaxel in a chemo-immunotherapy protocol, a disease-free melanoma study with IMP321 as an adjuvant to peptide antigens and a lympho-depletive/adoptive transfer metastatic melanoma study. More than 500 s.c. injections of IMP321 have been administered to date in Europe at doses up to 30 mg with no clinically significant drug-related adverse events.