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IPT, LLC IMMUNOTHERAPY CANCER TREATMENT/ IMMUNE PEPTIDE THERAPEUTICS
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Industry Sector(s): Healthcare
Product Category: Medical Laboratories & Research

Opportunity Overview

Despite the effectiveness of chemotherapy to eliminate cancer cells, a high percentage of patients eventually relapse or have progression of diseases. Our goal is to develop an efficacious immune therapy that would circumvent chemotherapy-induced immune deficiency and harness anti-tumor immunity. At IPT, we discovered a novel class of synthetic peptides that modulate immune functions, which could be an alternative regimen for immunotherapy to improve the clinical outcomes and limit tumor progression, and thus prolong the lives of cancer patients.

Markets & Applications

Cancer Immunotherapy:
Our peptide-based immunotherapy harnesses the anti-tumor immunity by enhancing tumoricidal activity of innate immune cells such as natural killer (NK) cells. Our peptides could be systemically administered to chemotherapy-treated cancer patients. Consequently, immune compromised cancer patients will have enhanced the immune surveillance system, and thus eradicate residual cancerous cells.

Cellular therapy:
Our synthetic peptides are strong activators for NK cells. Donor allogeneic NK cells could be activated ex vivo using our peptides, which will be adoptively transferred back to cancer patients as NK cell immunotherapy.

Adjuvant in vaccines:
Our peptides have adjuvant effects on stimulating innate immune cells, which in turn will amplify the protective immune responses elicited by vaccination. Our synthetic peptides could be used as adjuvants in therapeutic cancer vaccines for treatment as well as prophylactic vaccines for prevention.

Peptide derivative as oral immune modulators:
We have developed a peptide derivative that has different compositions from the prototype and exerts a more potent activity. Our new peptide derivative could be potentially used as an oral immune modulator.

Competitive Advantage/Value Propositions

Efficacious immune therapies engender disease-free survival for cancer patients.

At IPT, our team of graduate students, scientists and physicians are focusing on understanding the nature of immune physiology with ultimate goals of manipulating immunity effectors in various disease manifestations, including
cancer and immune-related disorders. By amplifying the pertinent arms of the immune system, immunotherapy enhances the anti-tumor immunity, and is now part of the therapeutic armamentarium for cancer treatment.

Researcher Biography

**Hua-Chen Chang, Ph.D.**

Dr. Chang is an Assistant Professor in the Department of Biology at IUPUI, and the founder of Immune Peptide Therapeutics, LLC. She has been trained as a molecular immunologist, and had recent success in publishing in journals including Blood, Immunity, and Nature Immunology on the role of transcription factors in the development of T helper cells. Dr. Chang’s research has been focused on understanding the fundamental nature of immune physiology and to manipulate immunity effectors in various disease manifestations. Her lab is now working on strategies to enhance the efficacy of cancer immunotherapy using newly developed synthetic peptide as an immune modulating agent.

Development Plans/Needs

1. Pursue private financing from internal Innovate State Funds if available as well as external support from public funds including federal agencies and private investment funds
2. Funds will be used to perform preclinical studies using various mouse models to demonstrate the *in vivo* effects of IPT’s peptides on enhancing antitumor activity that results in tumor regression.
3. Work to fully realize the commercial potential of IPT’s novel therapeutic regimens in cancer immunotherapy