

Teaser Memorandum

INDUSTRY-ACADEMIC COOPERATION FOUNDATION, DONGGUK UNIVERSITY

Title(Name of Technology) :

Development of Drug for Vitiligo Treatment Using Histamine



Executive Summary	IP Owner Summary
Dr. Ai-Young Lee, a professor of College of Medicine, Dongguk University, has developed a novel therapeutic drug for vitiligo that are very interesting in terms of efficacy, safety and commercializing potential.	Industry-University Cooperation Foundation Dongguk University
Vitiligo is a postnatal disorder that causes depigmentation in patches of skin. A multitue of approaches and researches have been made to prevent and treat vitiligo but the pathogenesis or cause of vitiligo is complex and not yet fully understood.	TLO in Dongguk University
The Industry-University Cooperation Foundation Dongguk University, a Technology Licensing Organization in Dongguk University, intends to enter into a technology transfer or licensing transaction with regard to anti-vitiligo agents. Terms of the transaction are not set, and interested parties may further discuss the details if they wish to enter into an agreement.	
Industry Sector:	Personal Description of
1. Academic/Research: Biotech, Diagnostic, 3. Biotech: Human diagnostics	Researcher
& therapeutics, 5. Drug delivery: Sustained release (Nasal, Oral liquid, Oral solid Parenteral) 8 Non-profit organization: university	
	□ Name
Therapeutic Target: vitiligo	Ai-Young Lee, Ph.D
	□ Present Position
Development phase: early stage	Professor
Type of business relationship sought (including licensing availability):	Skin Immunology, College of
development collaboration, or non-exclusive or exclusive licensing	Medicine, Dongguk University, Secul 100 715, Korea
agreement	Seour 100-713, Kolea
Key Technology Highlights	Office address
	Skin Immunology, Dongguk
Safe and Strong Therapeutic Efficacies The present inventors have found that has venom as natural compounds	University Medical Center, 814 Siksa-dong, Ilsandong-gu
was safe to human and its extract containing several components had a	Goyang-si, Gyeonggi-do 410-773,
therapeutic efficacy on vitiligo.	Korea
Analysis of Bee Venom Extract	
Several components were isolated from bee venom extract according to	
degranulating peptide), histamine, dopamine, epinephrine, GABA (gamma-aminobutyric acid) but not limited to	
Identification of an Active Ingredient Among several components from bee venom, histamine, particularly H2 group, showed remarkable anti-vitiligo activities, which were verified in proliferation experiments using melanocytes.	



Technology Overview

Technology Platform

The core technology of Dongguk University is to provide promising anti-vitiligo agents from bee venom. The bee venom extracts exhibit anti-vitiligo activities by distinctly various actions such as hyperpigmentation, enhanced proliferation and migration of melanocytes, production of melanin, and so on.

Background and unmet needs: Vitiligo is a chronic disorder that causes depigmentation in patches of skin. It occurs when the melanocytes, the cells responsible for skin pigmentation which are derived from the neural crest, die or are unable to function. Although a cause of vitiligo has not been understood, there is some evidence suggesting it is caused by a combination of autoimmune, genetic, and environmental factors. It is also common in people with thyroid disorders. The population incidence worldwide is considered to be less than 1 percent.

Bee venom is a bitter colorless liquid, which causes local inflammation and acts as an anticoagulant. The venom is produced in the abdomen of worker bees from a mixture of acidic and basic secretions. Bee venom therapy is used by some as a treatment for rheumatism and joint diseases due to its anticoagulant and anti-inflammatory properties.

Discovery and Achievements: Anti-vitiligo agents of Dongguk University have been developed on the basis of findings that the bee venom may induce proliferation of melanocytes and have anti-inflammatory activities. It is very difficult to isolate an active ingredient from bee venom, but several components were identified from bee venom. Of them, histamine, particularly H2 group, is very effective in production of melanin, proliferation and migration of melanocytes and formation of dendritic branches.

















Patents and Publications

Dongguk University have patents issued or filed for application in many countries such as U.S., Japan, Europe and Korea rwith regard to anti-vitiligo.

Country	Patent, Publication or Appln. No.	Status	Description
Korea	10-2009-0022877	Pending	Pharmaceutical composition for treatment of vitiligo containing histamine
Korea	10-2007-0003866	Granted	Compositions for Treating Vitiligo Comprising Bee Venom and Method for Screening Inhibitors against the Pigmentation Induced by Bee Venom
Korea	10-2005-0005317	Granted	Method for Screening Responsiveness to Drugs Effectivein Treatment or Prevention of Vitiligo and Method forPrognosis of Vitiligo
Korea	10-2005-0012288	Granted	A pharmaceutical composition comprising retinoid for prevention and treatment of vitiligo
Korea	10-2007-0006652	Granted	Method for Screening Materials for Preventing or Treating Vitiligo
Korea	10-2007-0104238	Pending	Polynucleotides for diagnosis of vitiligo and a diagnostic method of vitiligo using thereof
Korea	10-2009-0022937	Pending	Composition for Preventing or Treating of Obesity, Dyslipidemia, Fatty Liver or Insulin Resistance Syndrome Comprising Camphene as Active Ingredients
Korea	10-2009-0028030	Pending	Composition for Preventing or Treating of Obesity, Dyslipidemia, Fatty Liver or Insulin Resistance Syndrome Comprising Camphor as Active Ingredients

TABLE. List of Patents for Anti-Vitiligo Agents