

Licensing Status: Available for licensing under a Biological Materials License.

Licensing Contact: Tara Kirby, PhD; 301–435–4426; tk200h@nih.gov.

A Fertility Test To Detect Ovarian Autoimmune Disease Using Human Recombinant MATER Protein

Description of Technology: The inventors have identified MATER, a gene that plays an important role in fertility, and have shown that antibodies against MATER protein are detected at higher frequencies in women experiencing infertility and irregular menstrual periods than in healthy women. The discovery of MATER as an important factor in autoimmune-mediated ovarian dysfunction will facilitate diagnosis and treatment of these disorders. In addition to its critical role in ovarian autoimmunity, the inventors have also discovered that the MATER gene plays an essential role in embryonic development.

The invention discloses the MATER gene, MATER protein and MATER-specific antibodies. Also disclosed are methods and kits for evaluating female fertility through detection of an abnormal autoimmune response, an abnormal MATER gene, or abnormal MATER protein expression.

Applications

- Diagnostic test for women suffering from infertility or irregular menstrual periods.
- Tool for the study of early embryonic development.
- Tool for the development of MATER-based contraceptives.

Development Status: Established research test, ready for additional clinical research and commercial development.

Market: Approximately 10% of women of reproductive age experience infertility, and approximately 5% per year experience menstrual irregularity.

Inventors: Lawrence M. Nelson and Zhi-bin Tong (NICHD).

Publications


Patent Status


Foreign counterparts issued/pending in Australia, Canada, Europe, and Japan.

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Dated: August 17, 2010.

Richard U. Rodriguez,
Director, Division of Technology Development and Transfer, Office of Technology Transfer, National Institutes of Health.

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applications are filed on selected inventions to extend market coverage for companies and may also be available for licensing.

**ADRESSES:** Licensing information and copies of the U.S. patent applications listed below may be obtained by writing to the indicated licensing contact at the Office of Technology Transfer, National Institutes of Health, 6011 Executive Boulevard, Suite 325, Rockville, Maryland 20852–3804; telephone: 301/496–7057; fax: 301/402–0220. A signed Confidential Disclosure Agreement will be required to receive copies of the patent applications.

**Matrix Metalloproteinase-9 Blade-1 Region Peptides: Use as Cell Migration Modulators**

**Description of Technology:** Matrix metalloproteinase-9 (MMP–9) is an enzyme integrally involved in many normal physiological processes that require degradation and remodeling of the extracellular matrix, such as cell migration and invasion, wound repair, bone remodeling, angiogenesis, and embryonic growth. MMP–9 is shown to be involved in the progression of several diseases including many cancers, cardiovascular diseases, CNS diseases, respiratory diseases, and arthritis. In cancer, MMP–9 is thought to promote growth, migration, and spread of cancer cells by catalyzing the degradation of extracellular matrix proteins, releasing bound growth factors, and allowing cancer cells to escape from the primary tumor.

NIH Inventors have discovered that specific polypeptides corresponding to Blade-1 region of MMP–9 hemopexin domain can stimulate migration of cells, specifically the migration of cells expressing β1 integrin. The present technology can be used to develop novel therapeutic candidates for the prevention and treatment of human disease conditions mediated by MMP–9 promoted cell migration, e.g., cancer, inflammation, fibrotic diseases, cardiovascular diseases, CNS diseases, respiratory diseases, angiogenesis and arthritis.

**Applications:** Development of therapeutics for treating or preventing human diseases (cancer) using MMP–9 Blade-1 domain polypeptides or peptide analogs.

**Development Status:** Early-stage.

**Inventors:** SK Akiyama et al. (NIEHS)


**Licensing Status:** Available for licensing.

**Licensing Contact:** Suryanarayana Vepa, PhD, J.D.; 301–435–5020; vepas@mail.nih.gov.

**Collaborative Research Opportunity:** The National Institute of Environmental Health Sciences, Laboratory of Molecular Carcinogenesis, Cell Adhesion Group, is seeking statements of capability or interest from parties interested in collaborative research to further develop, evaluate, or commercialize this technology. Please contact Elizabeth M. Denholm, PhD at 919–541–0981 or denholme@mail.nih.gov for more information.

**Melanocyte Pigmentation or Proliferation With Neuregulin: Compositions and Methods to Treat Skin Disorders, Including Skin Cancer**

**Description of Invention:** Human skin pigmentation is regulated by complex and intricate interactions among melanocytes and keratinocytes in the epidermis and fibroblasts in the dermis. A number of factors secreted from keratinocytes and/or from fibroblasts have been shown to be involved in regulating skin pigmentation after UV exposure. NIH investigators have previously demonstrated that the less pigmented and thicker skin on the palms and soles is regulated by underlying fibroblasts in those areas, specifically via a secreted factor (DKK1) that modulates Wnt signaling. Now, using microarray analysis to compare gene expression patterns in 15 different primary dermal fibroblast populations derived from the dorsal trunk skin of three different skin phototypes (I, III and VI), these investigators have identified a number of genes that differ dramatically in expression. One among them, neuregulin 1 (NRG–1), secreted by fibroblasts derived from dark skin, effectively increases the pigmentation of melanocytes in tissue culture and in an artificial skin model and regulates their growth, suggesting it is one of the major factors determining human skin color. NRG-1 was observed to be highly expressed by fibroblasts derived from darker skin. NIH investigators believe that NRG–1 increases the proliferation of human melanocytes via the phosphorylation of Akt. These results suggest a potential role for NRG–1 in regulating constitutive human skin color and perhaps its dysfunction in pigmented skin diseases. Based on these observations, NIH investigators are currently developing compositions and methods of modulating pigmentation and proliferation of a melanocyte to prevent or treat skin disorders, including skin cancer.

**Applications:**

- Therapeutics for skin disorders.
- Therapeutics for skin cancer.

**Development Status:** Early stage and studies on reconstructed skin model and in melanocytes.

**Inventors:** Vincent J. Hearing and Wonseon Choi (NCI)

**Related Publications:**


**Licensing Status:** Available for licensing.

**Licensing Contact:** Suryanarayana Vepa, PhD, J.D.; 301–435–5020; vepas@mail.nih.gov

**Collaborative Research Opportunity:** The Center for Cancer Research, Laboratory of Cell Biology, is seeking statements of capability or interest from parties interested in collaborative research to further develop, evaluate, or commercialize the use of NRG–1 (or modifiers of its function) to regulate skin pigmentation. Please contact John Hewes, PhD at 301–435–3121 or hewesj@mail.nih.gov for more information.

**Dated:** August 17, 2010.

**Richard U. Rodriguez,**

Director, Division of Technology Development and Transfer, Office of Technology Transfer, National Institutes of Health.

[FR Doc. 2010–20862 Filed 8–20–10; 8:45 am]

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**DEPARTMENT OF HEALTH AND HUMAN SERVICES**

**Food and Drug Administration**

[Docket No. FDA–2010–N–0001]

**Food and Drug Administration Clinical Trial Requirements, Regulations, Compliance, and Good Clinical Practice; Public Workshop**

**AGENCY:** Food and Drug Administration, HHS.

**ACTION:** Notice of public workshop.