Licensing Status: Available for licensing.

Licensing Contact: Kevin W. Chang, PhD; 301–435–5018; *changke@mail.nih.gov*.

Collaborative Research Opportunity: The NIH Chemical Genomics Center (NCGC) is seeking statements of capability or interest from parties interested in collaborative research to further develop, evaluate, or commercialize appropriate lead compounds described in the patent application. Please contact Dr. Craig J. Thomas (*craigt@nhgri.nih.gov*) or Claire Driscoll (*cdriscol@mail.nih.gov*), Director of the NHGRI Technology Transfer Office, for more information.

Topical Formulation of Histone Deacetylase (HDAC) Inhibitors: Treatments for Cancer and Immunological Skin Disorders

Description of Invention: This technology relates to topical formulations of Histone Deacetylase (HDAC) inhibitors (HDIs) that can be used to treat cancers such as cutaneous T-cell lymphoma (CTCL) and skin disorders such as lupus, contact dermatitis, and drug eruptions which are associated with malignant or autoreactive lymphocytes from the immune system. HDIs, such as depsipeptide, have been demonstrated to be effective against CTCL when administered internally but a topical preparation may be more useful for treatment at earlier stages of the disease.

HDIs are molecules that inhibit the activity of a group of enzymes that remove small chemical groups called acetyl groups from many different proteins, including proteins that regulate gene expression. By altering the acetylation of these proteins, HDAC inhibitors can induce tumor cell differentiation, cell cycle arrest, and cell death. A variety of chemically distinct molecules exhibit HDAC inhibitory activity and their potential as therapeutics for cancer and other indications is being investigated. The HDI depsipeptide is a cyclical peptide derived from a bacterium and is indicated as a second line treatment for CTCL through intravenous administration. Development of a topical preparation of depsipeptide and/or other HDAC inhibitors may help reduce their toxicity and increase their effectiveness in treating CTCL, other cancers, as well as other diseases.

Applications:

- Use as a topical therapeutic for treatment of skin lymphomas.
- Use as a topical therapeutic for treatment of immunological skin disorders.

Advantages:

- HDIs such as vorinostat and depsipeptide have received regulatory approval for clinical use in systemic treatment of CTCL.
- Localized topical treatment reduces potential for adverse reactions, compared to systemic treatments.
- Clinical data illustrating the effectiveness of the topical formulation of depsipeptide are available.

Development Status: In early stage of clinical development.

Market: There is a need for effective low toxicity therapies to treat skin disorders due to activity of aberrant lymphocytes. CTCL is a rare form (800–1,000 new cases per year) of lymphoma in which the advanced disease can lead to disfigurement and pain. Patient mortality usually results from infections arising from eventual breach of the skin. An autoimmune disease, cutaneous lupus erythematosus accounts for about 10% of all lupus cases (1.4 million people in U.S.) and produces persistent skin lesions that may lead to scarring and hair loss. In the U.S., skin eruptions caused by prescribed medications are estimated to occur in approximately 2–5% of hospital patients. Most drug eruptions are delayed-type immune reactions with lymphocyte-mediated hypersensitivity which result in contact dermatitis, exanthematous reactions, and photoallergic reactions. A topical formulation of HDIs has potential of ameliorating the symptoms of these conditions.

Inventors: Susan Bates *et al.* (NCI).

Publication: Piekarz RL *et al.* Phase II multi-institutional trial of the histone deacetylase inhibitor romidepsin as monotherapy for patients with cutaneous T-cell lymphoma. J Clin Oncol. 2009 Nov 10;27(32):5410–5417. [PubMed: 19826128]

Patent Status: U.S. Patent Application No. 12/064,220 filed 19 Feb 2008 (HHS Reference No. E–238–2005/0–US–07) and foreign counterparts in Europe, Canada, Australia and Japan.

Licensing Status: Available for licensing.

Licensing Contact: Sabarni Chatterjee, PhD; 301–435–5587; *chatterjeesa@mail.nih.gov*.

Collaborative Research Opportunity: The Center for Cancer Research, Medical Oncology Branch and Affiliates, is seeking statements of capability or interest from parties interested in collaborative research to further develop, evaluate, or commercialize topical therapy using HDIs. Please contact John Hewes, PhD at 301–435–3131 or *hewesj@mail.nih.gov* for more information.

Variable Curve Catheter

Description of Invention: The invention provides a deflectable tip guiding device, such as a catheter, that enables the operator to vary the radius of curvature of the tip of the catheter. This is a novel variation on the classic "fixed fulcrum" tip deflectors used in minimally invasive procedures in open surgical treatments. The described device permits a more comprehensive ability to navigate complex geometric pathways in patient's body and enables better access to target structures (*e.g.,* to all endomyocardial walls from a transaortic approach). The guiding device can be made compatible with imaging methods like MRI. The described technology can be used as a platform for a variety of interventional devices for delivery of drugs, cells, energy, or sutures through complex trajectories of the body.

Inventors: Robert J. Lederman and Parag V. Karmarkar (NHLBI).

Patent Status: U.S. Patent Application No. 10/534,362 filed 07 Nov 2005 (HHS Reference No. E–035–2003/0–US–03).

Licensing Status: Available for licensing.

Licensing Contact: Jeffrey A. James; 301–435–5474; *jeffreyja@mail.nih.gov*.

Collaborative Research Opportunity: The NHLBI Translational Medicine Branch Cardiovascular Intervention Program is seeking statements of capability or interest from parties interested in collaborative research to further develop, evaluate, or commercialize technology for image-guided cardiovascular interventions. Please contact Peg Koelble at *koelblep@nhlbi.nih.gov* for more information.

Dated: April 20, 2010.

Richard U. Rodriguez,

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

[FR Doc. 2010–9640 Filed 4–23–10; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Government-Owned Inventions; Availability for Licensing

AGENCY: National Institutes of Health, Public Health Service, HHS.

ACTION: Notice.

SUMMARY: The inventions listed below are owned by an agency of the U.S. Government and are available for licensing in the U.S. in accordance with

35 U.S.C. 207 to achieve expeditious commercialization of results of federally-funded research and development. Foreign patent applications are filed on selected inventions to extend market coverage for companies and may also be available for licensing.

ADDRESSES: 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.

Thermostable Y-Family Polymerases From Fungi for Use in Forensic DNA Services and Analysis of Damaged or Ancient DNA

Description of Invention: Y-family polymerases are able to bypass lesions in DNA that would otherwise block replication by high fidelity DNA polymerases and are key to the effective study of ancient DNA and for use in forensic medicine. These enzymes are ubiquitous and are found in all kingdoms of life: Bacteria, archaea and eukaryotes. The number of proteins related to the Y-family polymerases is well over 200 orthologs and despite being closely related at the phylogenetic level, the few polymerases now characterized, each show a unique set of properties including processivity, fidelity, and the ability to bypass certain types of DNA. Y-family polymerases from thermostable organisms are of particular interest because the enzymes isolated from such species tend to be more stable, easy to work with and may have more utility in assays at higher temperatures, such as Polymerase Chain Reaction (PCR). For example, the thermostable archeal *Sulfolobus solfataricus* DinB-like polymerase Dpo4 can bypass lesions by generally inserting the correct complementary nucleotide opposite a variety of damaged bases and can, under appropriate conditions substitute for Taq polymerase in PCR applications [Nucleic Acids Res. 2001 Nov 15;29(22):4607–4616; HHS Ref. No. E–232–2001/0]. Additionally, functional and structural organization of this family of polymerases permits domain swapping designed to optimize specific properties of use in novel applications [J Biol Chem. 2004 Jul 30;279(31):32932–32940].

Dr. Woodgate's group at the National Institute of Child Health and Development have expanded their earlier work (HHS Ref. Nos. E–166–2004/0,/1, &/2) and have now cloned and expressed full length Y-family polymerases *Thermoascus auranticus* Pol eta, *Thermomyces lanuginosus* Pol eta, *Thermomyces lanuginosus* Pol iota, *Thermomyces lanuginosus* Pol kappa, *Thermomyces lanuginosus* REV1, *Sporotrichum thermophile* Pol eta, *Sporotrichum thermophile* Pol iota, *Sporotrichum thermophile* Pol kappa, and *Sporotrichum thermophile* REV1. These full length enzymes may be a good substitute for Taq polymerase in applications utilizing fluorescent nucleoside triphosphate derivatives. These lesion-bypassing polymerases could also be included along with a conventional thermostable polymerase in a PCR protocol designed to amplify old or damaged DNA samples which could greatly increase recoverability, accuracy and length of products. Other applications could include labelling or tagging DNA, real-time PCR, detection of SNPs, mismatches or DNA lesions, mutagenic PCR, directed-evolution methods and expanding the "DNA alphabet" utilizing non-natural nucleotides.

Available for licensing are several full length novel Y-family polymerases. These enzymes and methods should be of interest to forensic DNA service companies as well as to research reagent companies pursuing novel thermophilic enzymes for use in ancient and damaged DNA analysis and for novel applications with modified nucleotides.

Inventors: Roger Woodgate and John P. McDonald (NICHD).

Patent Status: U.S. Provisional Application No. 61/289,901 filed 23 Dec 2009 (HHS Reference No. E–254–2009/0–US–01).

Related Patents and Technologies: HHS Reference No. E–166–2004/2—

- U.S. Patent Application No. 11/596,783 filed 17 Nov 2006.
- Australian Patent Application No. 2005245966 filed 20 May 2005.
- Canadian Patent Application No. 2567563 filed 20 May 2005.
- South African Patent Application No. 2006/10533 filed 20 May 2005.

Licensing Status: Available for licensing.

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

Collaborative Research Opportunity: The National Institute of Child Health and Human Development, Laboratory of Genomic Integrity, is seeking statements of capability or interest from parties interested in collaborative research to further develop, evaluate, or commercialize the aforementioned thermostable fungal Y-family DNA polymerases. Please contact Joseph Conrad, Ph.D. at 301–435–3107 or *jmconrad@mail.nih.gov* for more information.

Compositions and Methods for Immunotherapy

Description of Invention: Granulysin is a cytolytic and proinflammatory molecule expressed by activated human cytotoxic T lymphocytes (CTLs) and natural killer (NK) cells. It has been implicated in many of diseases including infection, cancer, transplantation, autoimmunity, skin and reproductive maladies. Small synthetic forms of granulysin are being developed as novel antibiotics and studies suggest that granulysin may be a useful diagnostic biomarker and/or therapeutic for a wide variety of diseases.

The invention relates to methods of stimulating or enhancing an immune response using 15 kD granulysin. Investigators at the NIH have discovered that 15 kD granulysin (but not 9 kD granulysin) activates monocytes and induces them to differentiate into mature dendritic cells and activates allospecific T cells. This activation and subsequent differentiation induced by 15 kD granulysin may prove important in inducing or regulating immune responses in a host. Consequently, this invention could be used treat tumors and infections, particularly as an adjuvant for vaccines and immunotherapies. Further, this technology could be used to treat autoimmune disorders and organ transplant rejection.

Applications:

- Stimulating immunity to vaccinations, tumors or infections.
- Blocking the induction of an immune response in an autoimmune disease or organ transplant rejection.

Advantages:

- An immune response activator with broad applicability to the treatment of several diseases, including cancer, atherosclerosis, diabetes, autoimmune disorders, allergies, and infections.
- Co-administering 15kD granulysin could increase the efficacy of vaccines and immunotherapeutics.

Development Status:

- Pre-clinical stage.
- Animal data available.

Inventors: Alan M. Krensky and Carol Clayberger (NCI).

Publications:

1. Stenger S, Hanson DA, Teitlebaum R, Dewan P, Niazi KR, Froelich CJ, Ganz T, Thoma-Uszynski S, Melián A, Bogdan C, Porcelli SA, Bloom BR,

Krensky AM, Modlin RL. An antimicrobial activity of cytolytic T cells mediated by granulysin. Science 1998 Oct 2;282(5386):121–125. [PubMed: 9756476]

2. Krensky AM and Clayberger C. Biology and clinical relevance of granulysin. Tissue Antigens 2009 Mar;73(3):193–198. [PubMed: 19254247]

Patent Status: U.S. Provisional Application No. 61/250,601 filed 12 Oct 2009 (HHS Reference No. E–158–2009/0–US–01).

Licensing Status: Available for licensing.

Licensing Contact: Whitney Hastings, M.S.; 301–451–7337; *hastingw@mail.nih.gov.*

Collaborative Research Opportunity: The Center for Cancer Research, Laboratory of Cellular and Molecular Biology, is seeking statements of capability or interest from parties interested in collaborative research to further develop, evaluate, or commercialize this technology. Please contact John Hewes, Ph.D. at 301–435–3131 or *hewesj@mail.nih.gov* for more information.

Fully-Human Monoclonal Antibodies Against Human EphrinB2 and EphB4 for Use in the Study of Cancer Pathogenesis

Description of Invention: Ephrin receptor tyrosine kinases and their ephrin ligands have been implicated in cancer pathogenesis. Ephrin receptors and ligands affect tumor growth, invasiveness, angiogenesis, and metastasis. Ephrin signaling activities in cancer are complex and are only now beginning to be uncovered.

Researchers at the National Cancer Institute-Frederick, NIH, have developed a set of five fully-human monoclonal antibodies against human Ephrin-B2 and Ephrin type-B receptor 4 ("EphB4"). The antibodies were identified by screening a naïve human antibody phage display library against Ephrin-B2 and EphB4. These human monoclonal antibodies have high affinity and specificity for Ephrin-B2 and EphB4.

Applications:

- Research reagents for *in vitro/in vivo* investigation of Ephrin receptor and ligand interactions.
- Targeting reagents for *in vivo* imaging.
- Research reagents for protein co-crystallization.

Advantages:

- High affinity and antigen specificity.
- Bind both soluble ectodomains and cell surface-expressed molecules.

Inventors: Dimiter S. Dimitrov *et al.* (NCI).

Patent Status: HHS Reference No. E–331–2008/0 & E–331–2008/1—Research Material. Patent protection is not being pursued for this technology.

Licensing Status: Available for licensing.

Licensing Contact: Patrick P. McCue, Ph.D.; 301–435–5560; *mccuepat@mail.nih.gov.*

Collaborative Research Opportunity: The Center for Cancer Research Nanobiology Program is seeking statements of capability or interest from parties interested in collaborative research to further develop, evaluate, or commercialize this technology. Please contact John Hewes, Ph.D. at 301–435–3131 or *hewesj@mail.nih.gov* for more information.

Dated: April 20, 2010.

Richard U. Rodriguez,

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

[FR Doc. 2010–9642 Filed 4–23–10; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Government-Owned Inventions; Availability for Licensing

AGENCY: National Institutes of Health, Public Health Service, HHS.

ACTION: Notice.

SUMMARY: The inventions listed below are owned by an agency of the U.S. Government and are available for licensing in the U.S. in accordance with 35 U.S.C. 207 to achieve expeditious commercialization of results of federally-funded research and development. Foreign patent applications are filed on selected inventions to extend market coverage for companies and may also be available for licensing.

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New Mouse Strain With Conditional Deletion of SMAD7: Analysis of Disease Processes Involving Immunological, Fibrotic or Cardiovascular Indications

Description of Invention: SMAD7 conditional knockout mice are available for licensing. SMAD7 can be knocked out by breeding with CRE-recombinase transgenic mice with a variety of promoters to yield tissue or cell type-specific deletions of SMAD7. SMAD7 has been shown to play a role in bone morphogenesis, cardiovascular tissue generation, immune regulation and fibrosis. Therefore, these mice provide a unique model to examine the role of the SMAD7 gene in disease processes that involve immunological, fibrotic, or cardiovascular components. Specifically, these mice may represent a novel model of Scleroderma, a disease with both an immunological and fibrotic component.

Applications:

- Mouse model of Scleroderma.
- Means of studying bone morphogenesis and cardiovascular tissue generation.
- Means of studying the role of SMAD7 in immune regulation.

Inventors: Marilyn Diaz (NIEHS).

Related Publication: Dong C, Zhu S, Wang T, Yoon W, Li Z, Alvarez RJ, Dijke P, White B, Wigley FM, Godschmidt-Clermont PJ. Deficient Smad7 expression: A putative molecular defect in scleroderma. Proc Natl Acad Sci USA. 2002 Mar 19;99(6):3908–3913. [PubMed: 11904440]

Patent Status: HHS Reference No. E–040–2010/0—Research Material. Patent protection is not being pursued for this technology.

Licensing Status: This technology is available as a research tool under a Biological Materials License.

Licensing Contact: Steve Standley, Ph.D.; 301–435–4074; *sstand@od.nih.gov.*

Collaborative Research Opportunity: The NIEHS is seeking statements of capability or interest from parties interested in collaborative research to further develop, evaluate, or commercialize this technology. Please contact Dr. Elizabeth M. Denholm, *denholme@niehs.nih.gov,* for more information.

A Method of Reducing Cholesterol Biosynthesis With Specific MicroRNAs

Description of Invention: This technology is directed to the discovery of specific microRNAs that target and downregulate enzymes within the cholesterol biosynthetic pathway and is currently being tested in vivo.

Briefly, microRNAs regulate the translation of messenger RNAs (mRNAs)