Patent Status: U.S. Provisional Application No. 61/455,261 filed 14 Oct 2010 (HHS Reference No. E–197–2010/0–US–01).

Licensing Status: Available for licensing.

Licensing Contact: Peter A. Soukas, J.D.; 301–435–4646; *soukasp@mail.nih.gov.*

Method for Detection and Quantification of PLK1 Expression and Activity

Description of Technology: Polo-like kinase 1 (Plk1) plays a role in the regulation of the cell cycle and control of cellular proliferation. Because Plk1 is associated with neoplastic transformation of human cells, expression of this protein has been proposed as a prognostic marker for many types of malignancies. In mammalian cells, four Plks exist, but their expression patterns and functions appear to be distinct from each other. Available for licensing is a Plk1 ELISA assay using peptide substrates that are specific for Plk1, in that they are phosphorylated and bound by Plk1, but not by the related polo kinases Plk2, Plk3 and Plk4.

By exploiting a unique Plk1-dependent phosphorylation and binding property, an easy and reliable ELISA assay has been developed to quantify Plk1 expression levels and kinase activity. With this highly sensitive assay, Plk1 activity can be measured with 2–20 microgram of total lysates without immunoprecipitation or purification steps. Since deregulated Plk1 expression has been suggested as a prognostic marker for a wide range of human malignancies, this assay may provide an innovative tool for assessing the predisposition for cancer development, monitoring cancer progression, and estimating the prognosis of various types of cancer patients.

Applications:

• Optimized PBIP1 polypeptides, a natural substrate of Plk1, with enhanced specificity and sensitivity over the native PBIP1 sequence.

• ELISA assay to quantify Plk1 expression and kinase activity.

Advantages:

• Rapid, highly sensitive assay that requires lower amounts of starting material than conventional immunoprecipitation assays.

• Assay that is selective for Plk1.

Development Status: The technology is currently in the pre-clinical stage of development.

Market:

• Cancer is the second leading cause of death in United States.

• An estimated 1,529,560 new cancer cases and 569,490 deaths from cancer occurred in the United States in 2010.

• *In vitro* cancer diagnostic market will be worth an estimated $8 billion by the end of 2012.

Inventors: Kyung S. Lee and Jung-Eun Park (NCI).

Publications:

1. JE Park *et al.* Direct quantification of polo-like kinase 1 activity in cells and tissues using a highly sensitive and specific ELISA assay. Proc Natl Acad Sci USA. 2009 Feb 10;106(6):1725–1730. [PubMed: 19181852]

2. KS Lee *et al.* Mechanisms of mammalian polo-like kinase 1 (Plk1) localization: self-versus non-self-priming. Cell Cycle 2008 Jan;7(2):141–145. [PubMed: 18216497]

3. KS Lee *et al.* Self-regulated mechanism of Plk1 localization to kinetochores: lessons from the Plk1–PBIP1 interaction. Cell Div. 2008 Jan 23;3:4. [PubMed: 18215321]

4. YH Kang *et al.* Self-regulated Plk1 recruitment to kinetochores by the Plk1–PBIP1 interaction is critical for proper chromosome segregation. Mol Cell. 2006 Nov 3;24(3):409–422. [PubMed: 17081991]

Patent Status: U.S. Patent Application No. 12/992,887 filed 15 Nov 2010 (HHS Reference No. E–091–2008/0–US–03).

Licensing Status: Available for licensing.

Licensing Contact: Jennifer Wong; 301–435–4633; *wongje@mail.nih.gov.*

Collaborative Research Opportunity: The National Cancer Institute, Laboratory of Metabolism, is seeking statements of capability or interest from parties interested in collaborative research to further develop, evaluate, or commercialize the PLK1 ELISA assay described above. Please contact John D. Hewes, Ph.D. at 301–435–3121 or *hewesj@mail.nih.gov* for more information.

Immunoglobulin-Producing Mouse Plasmacytomas

Description of Technology: Overall cancer costs in the U.S. in 2006 are estimated at $206.3 billion. The World Health Organization predicts upwards of 15 million new cancer cases globally by 2020. There remains a significant unmet need for new therapies to treat cancer, as well as a need to further understand the role of the immune system in cancer susceptibility.

Available for licensing are isolated immunoglobulin-producing mouse plasmacytomas (PCTs). Each tumor produces only one species of monoclonal immunoglobulin (Ig). When transplanted into mice, these plasma cell tumors will continue to produce only the same unique Ig molecules. Some (5–10%) of the Igs specifically bind antigens.

Applications:

• To understand the underlying process of neoplastic development.

• To identify the genes that control tumor susceptibility and resistance.

• To investigate the antigen binding activities of myeloma proteins.

• To study Ig synthesis.

• To classify the various different classes of Igs (IgG, IgA, IgM).

• As a fusion partner to make monoclonal antibodies.

Advantages: Provide an unlimited source of pure monoclonal Ig molecules.

Inventor: Michael Potter (NCI).

Relevant Publications:

1. Potter M, Fahey JL, Pilgrim HI. Abnormal serum protein and bone destruction and transmissible mouse plasma cell neoplasm (multiple myeloma). Proc Soc Exp Biol Med. 1957 Feb;94(2):327–333.

2. Nathans D, Fahey JL, Potter M. The formation of myeloma protein by a mouse plasma cell tumor. J Exp Med. 1958 Jul 1;108(1):121–130. [PubMed: 13549645]

3. Potter M, Boyce CR. Induction of plasma cell neoplasms in strain BALB/c mice with mineral oil and mineral oil adjuvants. Nature. 1962 Mar 17;193:1086–1087.

4. Andersen PN, Potter M. Induction of plasma cell tumors in BALB/c mice with 2,6,10,14-tetramethylpentadecane (pristane). Nature. 1969 Jun 7;222(5197):994–995.

Patent Status: HHS Reference No. E–277–2001/0—Research Material. Patent protection is not being pursued for this technology.

Licensing Status: Available for biological materials licensing only.

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

Dated: January 19, 2011.

Richard U. Rodriguez,

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

[FR Doc. 2011–1669 Filed 1–26–11; 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.

A Computer Program To Predict Optimal Sites on Protein Sequences for Production of Peptide-Directed Antibodies (NHLBI AbDesigner)

Description of Technology: The invention offered for licensing is a computer program called "NHLBI AbDesigner" that allows the user to input a unique identifier for an individual mammalian protein to be analyzed in order to find out what short peptides in its amino sequence would most likely result in a strong immunogenic response when injected into a research animal. The software displays standard predictors of immunogenicity and antigenicity in easy-to-view heat maps and also allows users to choose peptides most likely to elicit antibodies that are specific to said protein. The computer code is written in Java and would be made available in the form of jar files.

For additional information please refer to: *https://dirweb.nhlbi.nih.gov/labs/LKEM_G/LKEM/Pages/Antibodydesignsoftware.aspx.*

Applications:

• Design and production of antibodies for research or therapeutic purposes.

• Bioinformatic analysis of protein structure and functions.

• Analysis and interpretation of proteomic data.

Advantages: This program allows the user to identify tradeoffs in the decision making process by aligning various types of information with the amino acid sequence, constituting an improvement over present ad hoc methods of accumulating and relating different type of information regarding immunogenicity, uniqueness of sequences, conservation of sequences, and presence of post-translational modifications.

Development Status: Fully developed.

Inventors: Mark A. Knepper (NHLBI) *et al.*

Patent Status: HHS Reference No. E–251–2010/0—Software. Patent protection is not being pursued for this technology.

Licensing Status: Available for licensing.

Licensing Contacts:

• Uri Reichman, PhD, MBA; 301–435–4616; *UR7a@nih.gov*.

• Michael Shmilovich, Esq.; 301–435–5019; *shmilovm@mail.nih.gov*.

Collaborative Research Opportunity: The NHLBI is seeking statements of capability or interest from parties interested in collaborative research to further develop, evaluate, or commercialize this technology. Please contact Brian Bailey, Ph.D. at 301–594–4094 or *bbailey@mail.nih.gov* for more information.

Nanoparticle Probes and Mid-Infrared Chemical Imaging for DNA Microarray Detection

Description of Technology: The technology offered for licensing is a faster, more flexible, cost-effective microarray visualization. The invention describes and claims the mid-infrared chemical imaging (IRCI) to detect nanostructure-based DNA microarrays, which can be utilized in the life science research arena to examine gene expression and single nucleotide polymorphisms (SNPs), as well as to characterize entire genomes. The IRCI improves the signal-to-noise ratio (SNR) obtained for hybridized microarrayed spots compared to the commonly used fluorescence detection method. The improved method of this invention results in the sensitivity and precision for detecting pathogenic bacterial genes and can be utilized to detect low-expressing genes which cannot be identified by fluorescent-based DNA microarrays. Furthermore, the automated IRCI systems can also be fabricated for the dedicated detection of other (protein, tissue, biochemical, or chemical) microarrays.

Applications: DNA microarrays can be applied to the areas of environmental sciences, agriculture research, bio-defense, diagnostics, forensics, pharmacogenomics and toxicogenomics.

Advantages: The invention provides a cost-effective, faster, more flexible, and less labor intensive microarray technology.

Development Status:

• The invention is fully developed.

• Need to develop a commercialized kit and protocol.

Inventors: Magdi M. Mossoba, et al. (FDA).

Patent Status: U.S. Provisional Application No. 61/395,635 filed 15 Oct 2010 (HHS Reference No. E–127–2010/0–US–01).

Licensing Status: Available for licensing.

Licensing Contact: Susan Ano, PhD; 301–435–5515; *anos@mail.nih.gov*.

Fluoroquinolone Derivatives as Inhibitors of Human Tyrosyl-DNA Phosphodiesterase (Tdp1)

Description of Technology: Chemotherapy can provide therapeutic benefits in many cancer patients, but it often ultimately fails to cure the disease since cancer cells can become resistant to the chemotherapeutic agent. To overcome these limitations, additional strategies are needed to restore or amplify the effect of antitumor agents. Tyrosyl-DNA phosphodiesterase 1 (Tdp1) is a DNA repair enzyme involved in the repair of DNA lesions created when the activity of the Topoisomerase 1 (Top1) is inhibited. Tdp1 has been regarded as a potential therapeutic co-target of Top1 in that it seemingly counteracts the effects of Top1 inhibitors, such as camptothecin. By reducing the repair of Top1-DNA lesions, Tdp1 inhibitors have the potential to augment the anticancer activity of Top1 inhibitors.

The NIH investigators discovered fluoroquinolone derivatives as specific Tdp1 inhibitors that could potentiate the pharmacological action of Top1 inhibitors, which are currently used in cancer treatment. The instant invention discloses a method of treating cancers with a therapeutically effective amount of a Top1 inhibitor, and a fluoroquinolone derivative that inhibits Tdp1 activity.

Applications and Market:

• This invention may provide a new combination of drugs to target various cancers for treatment.

• Cancer is the second leading cause of death in the U.S. The National Cancer Institute estimates the overall annual costs for cancer in the U.S. at $107 billion; development of more effective cancer therapies is always in high demand.

Development Status: Pre-clinical stage of development.

Inventors: Yves G. Pommier, Christophe R. Marchand, Thomas S. Dexheimer (NCI), *et al.*

Related Publications:

1. Dexheimer TS, Antony S, Marchand C, Pommier Y. Tyrosyl-DNA phosphodiesterase as a target for

anticancer therapy. Anticancer Agents Med Chem. 2008 May;8(4):381–389. [PubMed: 18473723]

2. Dexheimer TS, *et al.* 4-Pregnen-21-ol-3,20-dione-21-(4-bromobenzenesulfonate) and related novel steroid derivatives as tyrosyl-DNA phosphodiesterase (Tdp1) inhibitors. J Med Chem. 2009 Nov 26;52(22):7122–7131. [PubMed: 19883083]

3. Marchand C, *et al.* Identification of phosphotyrosine mimetic inhibitors of human tyrosyl-DNA phosphodiesterase I by a novel AlphaScreen high-throughput assay. Mol Cancer Ther. 2009 Jan;8(1):240–248. [PubMed: 19139134]

Patent Status: U.S. Provisional Application No. 61/407,325 filed 07 Oct 2010 (HHS Reference No. E–199–2010/0–US–01).

Licensing Status: Available for licensing.

Licensing Contact: Betty B. Tong, PhD; 301–594–6565; *tongb@mail.nih.gov.*

Collaborative Research Opportunity: The Center for Cancer Research, Laboratory of Molecular Pharmacology, is seeking statements of capability or interest from parties interested in collaborative research to further develop, evaluate, or commercialize tyrosyl-DNA-phosphodiesterase inhibitors. Please contact John Hewes, PhD at 301–435–3121 or *hewesj@mail.nih.gov* for more information.

HMG3 for Detecting and Treating Diabetes

Description of Technology: This invention relates to the use of High Mobility Group N 3 (HMGN3) as a marker for detecting diabetes and as a therapeutic agent for treating diabetes.

Diabetes is disabling largely because commonly available anti-diabetic drugs do not adequately control blood sugar levels to completely prevent the occurrence of high and low blood sugar levels. Inappropriate blood sugar levels can be toxic and can cause long-term complications including renopathy, retinopathy, neuropathy and peripheral vascular disease. Those with diabetes are also at risk for developing related conditions such as obesity, hypertension, heart disease and hyperlipidemia.

This invention relates to the discovery that reduced expression of HMGN3 (also called TRIP7) gives rise to elevated blood glucose levels, reduced serum insulin levels and impaired glucose tolerance.

Applications: Diagnostic and therapeutic for diabetes.

Development Status: Early stage.

Inventors: Michael Bustin *et al.* (NCI).

Related Publication: Ueda T, Furusawa T, Kurahashi T, Tessarollo L, Bustin M. The nucleosome binding protein HMGN3 modulates the transcription profile of pancreatic beta cells and affects insulin secretion. Mol Cell Biol. 2009 Oct;29(19):5264–5276. [PubMed: 19651901]

Patent Status: PCT Application No. PCT/US2009/039406 filed 03 Apr 2009 (HHS Reference No. E–338–2008/0–PCT–01).

Licensing Status: Available for licensing.

Licensing Contact: Fatima Sayyid, M.H.P.M.; 301–435–4521; *Fatima.Sayyid@nih.hhs.gov.*

Collaborative Research Opportunity: The National Cancer Institute, Laboratory of Metabolism, is seeking statements of capability or interest from parties interested in collaborative research to further develop, evaluate, or commercialize HMGN and related chromatin-binding proteins in the function of pancreatic islet cells. Please contact John Hewes, PhD at 301–435–3121 or *hewesj@mail.nih.gov* for more information.

Molecular Motors Powered by Proteins

Description of Technology: The technology available for licensing and commercial development relates to molecular motors powered by proteins. Some implementations describe a molecular motor in which multiple concentric cylinders or nested cones rotate around a common longitudinal axis. Opposing complementary surfaces of the cylinders or cones are coated with complementary motor protein pairs, such as actin and myosin. The actin and myosin interact with one another in the presence of ATP to rotate the cylinders or cones relative to one another, and this rotational energy is harnessed to produce work. Speed of movement is controlled by the concentration of ATP and the number of nested cylinders or cones. The length of the cylinders or cones can also be used to control the power generated by the motor.

Another configuration forms the motor out of a set of stacked disks, much like CDs on a spindle. The advantage of this form is extreme simplicity of construction compared to the nested cylinders or cones. In yet another configuration, which has aspects of both of the previous forms, the surfaces are broken into annular rings in order to overcome that the inner surfaces rotate at a different rate than the outer surfaces. This belt form may ultimately be used in molecular manufacturing.

Applications:

- Supplying power to prosthetic implants and other medical devices without external power sources.
- Many other applications that could use a motor in other biotechnological areas, in addition to the medical applications.
- The inventions can be implemented on either a microscopic or macroscopic scale.

Development Status: Very early stage of development.

Inventors: Thomas D. Schneider and Ilya G. Lyakhov (NCI).

Relevant Publications: "Molecular Motor", Patent Publication Nos. WO 2001/009181 A1, published 02/08/2001; CA 2380611A1, published 02/08/2001; AU 6616600A, published 02/19/2001; EP 1204680A1, published 05/15/2002; and U.S. 20020083710, published 07/04/2002.

Patent Status:

- HHS Reference No. E–018–1999/0—International Application Number PCT/US 2000/20925 filed 31 Jul 2000; granted Application AU 2002/18688 B2, and the corresponding European and Canadian applications being prosecuted, all entitled "Molecular Motor"
- HHS Reference No. E–018–1999/1—U.S. Patent No. 7,349,834 issued 25 Mar 2008, and U.S. Patent Application No. 12/011,239 filed 24 Jan 2008, both entitled "Molecular Motor"

Licensing Status: Available for licensing.

Licensing Contact: Susan Ano, PhD; 301–435–5515; *anos@mail.nih.gov*.

Collaborative Research Opportunity: The National Cancer Institute, 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 the Molecular Rotation Engine. Please contact John D. Hewes, PhD at 301–435–3121 or *hewesj@mail.nih.gov* for more information.

Dated: January 19, 2011.

Richard U. Rodriguez,

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

[FR Doc. 2011–1671 Filed 1–26–11; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Center for Scientific Review; Notice of Closed Meeting

Pursuant to section 10(d) of the Federal Advisory Committee Act, as