ACTION: Notice.

SUMMARY: The Food and Drug Administration (FDA) has determined the regulatory review period for METVIXIA and is publishing this notice of that determination as required by law. FDA has made the determination because of the submission of an application to the Director of Patents and Trademarks, Department of Commerce, for the extension of a patent which claims that human drug product.

ADDRESSES: Submit electronic comments to *http://www.regulations.gov.* Submit written petitions along with three copies and written comments to the Division of Dockets Management (HFA–305), Food and Drug Administration, 5630 Fishers Lane, rm. 1061, Rockville, MD 20852.

FOR FURTHER INFORMATION CONTACT: Beverly Friedman, Office of Regulatory Policy, Food and Drug Administration, 10903 New Hampshire Ave., Bldg. 51, rm. 6222, Silver Spring, MD 20993–0002, 301–796–3602.

SUPPLEMENTARY INFORMATION: The Drug Price Competition and Patent Term Restoration Act of 1984 (Pub. L. 98–417) and the Generic Animal Drug and Patent Term Restoration Act (Pub. L. 100–670) generally provide that a patent may be extended for a period of up to 5 years so long as the patented item (human drug product, animal drug product, medical device, food additive, or color additive) was subject to regulatory review by FDA before the item was marketed. Under these acts, a product's regulatory review period forms the basis for determining the amount of extension an applicant may receive.

A regulatory review period consists of two periods of time: A testing phase and an approval phase. For human drug products, the testing phase begins when the exemption to permit the clinical investigations of the drug becomes effective and runs until the approval phase begins. The approval phase starts with the initial submission of an application to market the human drug product and continues until FDA grants permission to market the drug product. Although only a portion of a regulatory review period may count toward the actual amount of extension that the Director of Patents and Trademarks may award (for example, half the testing phase must be subtracted as well as any time that may have occurred before the patent was issued), FDA's determination of the length of a regulatory review period for a human drug product will include all of the testing phase and approval phase as specified in 35 U.S.C. 156(g)(1)(B).

FDA approved for marketing the human drug product METVIXIA (Methyl aminolevulinate hydrochloride). METVIXIA is indicated for treatment of thin and moderately thick, non-hyperkeratotic, non-pigmented actinic keratoses of the face and scalp in immunocompetent patients when used in conjunction with lesion preparation in the physician's office when other therapies are considered medically less appropriate. Subsequent to this approval, the Patent and Trademark Office received a patent term restoration application for METVIXIA (U.S. Patent No. 6,034,267) from PhotoCure ASA, and the Patent and Trademark Office requested FDA's assistance in determining this patent's eligibility for patent term restoration and that FDA determine the product's regulatory review period. In a letter dated May 25, 2011, FDA advised the Patent and Trademark Office that this human drug product had undergone a regulatory review period and that the approval of METVIXIA represented the first permitted commercial marketing or use of the product.

FDA has determined that the applicable regulatory review period for METVIXIA is 1,695 days. Of this time, 659 days occurred during the testing phase of the regulatory review period, while 1,036 days occurred during the approval phase. These periods of time were derived from the following dates:

1. *The date an exemption under section 505(i) of the Federal Food, Drug, and Cosmetic Act (the FD&C Act) (21 U.S.C. 355(i)) became effective:* December 8, 1999. The applicant claims February 24, 2000, as the date the investigational new drug application (IND) became effective. However, FDA records indicate that the testing phase began when an earlier IND became effective on December 8, 1999, which was 30 days after FDA receipt of the earlier IND.

2. *The date the application was initially submitted with respect to the human drug product under section 505(b) of the FD&C Act:* September 26, 2001. FDA has verified the applicant's claim that the new drug application (NDA) for METVIXIA (NDA 21–415) was submitted on September 26, 2001.

3. *The date the application was approved:* July 27, 2004. FDA has verified the applicant's claim that NDA 21–415 was approved on July 27, 2004.

This determination of the regulatory review period establishes the maximum potential length of a patent extension. However, the U.S. Patent and Trademark Office applies several statutory limitations in its calculations of the actual period for patent extension. In its application for patent extension, this applicant seeks 871 days of patent term extension.

Anyone with knowledge that any of the dates as published are incorrect may submit to the Division of Dockets Management (see **ADDRESSES**) either electronic or written comments and ask for a redetermination by August 22, 2011. Furthermore, any interested person may petition FDA for a determination regarding whether the applicant for extension acted with due diligence during the regulatory review period by December 19, 2011. To meet its burden, the petition must contain sufficient facts to merit an FDA investigation. (See H. Rept. 857, part 1, 98th Cong., 2d sess., pp. 41–42, 1984.) Petitions should be in the format specified in 21 CFR 10.30.

Interested persons may submit to the Division of Dockets Management (see **ADDRESSES**) electronic or written comments and written petitions. It is only necessary to send one set of comments. It is no longer necessary to send three copies of mailed comments. However, if you submit a written petition, you must submit three copies of the petition. Identify comments with the docket number found in brackets in the heading of this document.

Comments and petitions that have not been made publicly available on *http://www.regulations.gov* may be viewed in the Division of Dockets Management between 9 a.m. and 4 p.m., Monday through Friday.

Dated: May 25, 2011.

Jane A. Axelrad,

Associate Director for Policy, Center for Drug Evaluation and Research.

[FR Doc. 2011–15625 Filed 6–21–11; 8:45 am]

BILLING CODE 4160–01–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 System for Delivering Embolic Materials Endovascularly to Patients

Description of Technology: The Public Health Service seeks commercial entities interested in licensing patent rights that pertain to a system for delivering embolic materials endovascularly to patients. The system includes a smart catheter that provides quantitative feedback to a physician during embolotherapy. This includes a detecting portion for measuring flow velocity (*e.g.,* Doppler tip), amount of reflux, and amount of embolic particles (*e.g.,* embolization beads) delivered by the catheter. A graphical user interface displays the measured information in real-time.

Applications:

- Transarterial chemoembolization
- Drug eluting bead
- Intravenous drug delivery
- Drug distribution monitoring
- Real-time imaging

Inventors: Matthew Dreher, Elliot Levy, Karun Sharma, David Tabriz, Peter Guion, Ankur Kapoor, Bradford Wood (all NIHCC).

Patent Status: U.S. Provisional Application No. 61/486,722 filed 16 May 2011 (HHS Reference No. E–184–2011/0–US–01).

Licensing Status: Available for licensing.

Licensing Contact: Michael A. Shmilovich, Esq.; 301–435–5019; shmilovm@mail.nih.gov.

Collaborative Research Opportunity: The NIH Clinical Center, Radiology and Imaging Sciences Department, is seeking statements of capability or interest from parties interested in collaborative research to further develop, evaluate, or commercialize a catheter for quantitative feedback during embolotherapy. Please contact Ken Rose, PhD at 301–435–3132 or *rosek@mail.nih.gov* for more information.

Liver Segmental Anatomy and Analysis From Vessel and Tumor Segmentation

Description of Technology: The invention is a novel graph-based method for the automated segmentation of tumors and major intra-hepatic blood vessels and identification of the liver anatomical segments. The method allows visualization and risk analysis for interventional planning involving the liver. The method avoids the shortcomings of the traditional graph cuts or intensity-based segmentation methods by including multi-phase enhancement modeling and shape likelihoods. The segmented vessels can be correctly classified into right, middle and left hepatic, and right and left portal veins using a hybrid process that incorporates anatomical information and competitive region growing. Tumors can be detected and segmented using their differential enhancement and shape with accuracy comparable to the reports from the Medical Image Computing and Computer Assisted Intervention (MICCAI) liver tumor segmentation competition. Furthermore, a vessel tracker allowed fitting planes to the major hepatic vasculature and identifying the liver segments according to the Couinaud atlas. The automated method can be used in conjunction with manual and automatic liver segmentations to perform enhanced visualization for diagnosis and planning of interventions.

Applications: To assist in the visualization, diagnosis and planning of interventional procedures involving the liver.

Advantages:

- The method avoids the shortcomings of the traditional segmentation methods by including multi-phase enhancement modeling and shape likelihoods.
- Tumors are segmented with accuracy comparable to the reports from MICCAI liver tumor segmentation competition.
- Liver segments according to the Couinaud Atlas are automatically identified.
- The automated method allows the enhanced visualization of the liver for diagnosis and planning of interventions.

Development Status: The algorithm and software of the method are fully developed.

Inventors: Marius G. Linguraru and Bradford J. Wood (NIHCC).

Patent Status: HHS Reference No. E–178–2011/0—Software/Research Tool. Patent protection is not being pursued for this technology.

Licensing Status: A software package encompassing the method is 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 NIH Clinical Center, Department of Radiology and Imaging Sciences, is seeking statements of capability or interest from parties interested in collaborative research to further develop, evaluate, or commercialize techniques for the enhanced visualization, diagnosis and image-based interventions of the liver. Please contact Ken Rose, PhD at 301–435–3132 or *rosek@mail.nih.gov* for more information.

MicroRNA–205 for the Treatment and Diagnosis of Parkinson Disease

Description of Technology: Parkinson disease (PD) is a devastating neurodegenerative movement disorder, pathologically characterized by selective loss of dopaminergic (DA) neurons in the substantia nigra pars compacta (SNpc) and the presence of intracytoplasmic inclusions named Lewy bodies and Lewy neurites (Schapira, *Baillieres Clin. Neurol.* 6:15–36, 1997). Increasing numbers of genes have been identified as a genetic cause of PD (Hardy *et al., Ann. Neurol.* 60:389–398, 2006), for example, multiple missense mutations in the leucine-rich repeat kinase 2 (LRRK2) gene were recently found to be associated with an autosomal dominant form of familial PD (Paisan-Ruiz *et al., Neuron* 44:595–600, 2004; Zimprich *et al., Neuron* 44:601–607, 2004; Zabetian et al., Neurology 65:741–744, 2005). Recent genome-wide association studies (GWAS) also revealed LRRK2, together with SNCA (encoding α-syn) and PARK16, as shared risk loci for PD (Simon-Sanchez *et al., Nat. Genet.* 41:1308–1312, 2009; Satake *et al., Nat. Genet.* 41:1303–1307, 2009), indicating a potential contribution of normal LRRK2 protein to the etiology of sporadic PD cases.

Micro-RNAs (miRNAs or miRs) are evolutionarily conserved small non-protein coding transcripts that bind to partially complementary binding sites in the 3' untranslated region (3'-UTR) of target messenger RNAs (mRNAs) and control the translation of their target mRNAs at the post-transcriptional level (Bartel, *Cell* 116:281–297, 2004). Several miRNAs have been associated with neurodegenerative disease as well as synaptic plasticity, memory formation and developmental cell fate decisions in the nervous system (Hebert and De Strooper, *Trends Neurosci.* 32:199–206, 2009; Kosik, *Nat. Rev. Neurosci.* 7:911–920, 2006).

NIH inventors have recently discovered that LRRK2 protein

expression is significantly increased in the brain of PD patients, while expression of miR–205 is specifically down-regulated in the same patients. Also, the NIH inventors have discovered that the expression levels of LRRK2 and miR–205 are dynamically regulated and reversely correlated in multiple brain regions and at different ages in mouse brains, indicating that miR–205 plays a regulatory role in LRRK2 protein expression.

Based on these novel findings, the present technology provides for novel methods of treatment of patients suffering from PD disease by modulating the amount of miR–205 in patients by administration of a miR–205 gene product, a vector encoding a miR–205 gene product or an agent that increases expression of miR–205. The present technology also provides for methods of determining the effectiveness of different candidate drugs for the treatment of PD, methods of diagnosing PD, or having an increased susceptibility to developing PD, and an *in vitro* process for identifying a therapeutic agent for the treatment of PD.

Applications: Therapeutics and diagnostics for PD.

Development Status: Early-stage.

Inventors: Huaibin Cai and Hyun J. Cho (NIA).

Patent Status: U.S. Provisional Application No. 61/430,626 filed 07 Jan 2011 (HHS Reference No. E–209–2010/0–US–01).

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 on Aging, Transgenics Section, is seeking statements of capability or interest from parties interested in collaborative research to further develop, evaluate, or commercialize microRNA–205 or other reagents for the treatment and diagnosis of Parkinson Disease. Please contact Nicole Guyton, PhD at 301–435–3101 or *darackn@mail.nih.gov* for more information.

Dated: June 14, 2011.

Richard U. Rodriguez,

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

[FR Doc. 2011–15467 Filed 6–21–11; 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.

Monoclonal Antibodies to Glypican-3 Protein and Heparin Sulfate for Treatment of Cancer

Description of Technology: Hepatocellular carcinoma (HCC) is the most common form of liver cancer, and is among the more deadly cancers in the world due to its late detection and poor prognosis. HCC is often associated with liver disease, curtailing traditional chemotherapy as a treatment option. While surgical resection offers the best method for long term treatment of the disease, only a small portion of HCC patients are eligible for this procedure. As a result, there is a need for new treatments that can be successfully applied to a large population of HCC patients.

Glypican-3 (GPC3) is a cell surface protein that is preferentially expressed on HCC cells. Evidence has demonstrated that a soluble form of GPC3 that is incapable of cell signaling has the ability to inhibit the growth of HCC cells. This suggested that blocking GPC3 signaling could serve as a therapeutic approach for treating HCC.

This invention concerns monoclonal antibodies against GPC3 and their use, either by themselves or as the targeting domain for an immunotoxin, for the treatment of GPC3-expressing cancers such as HCC. Specifically, the inventors have generated two distinct monoclonal antibodies to GPC3. The first monoclonal antibody (HN3) binds to a conformational epitope on the cell surface domain of GPC3. The second monoclonal antibody (HS20) binds specifically to heparin sulfate chains on GPC3.

By blocking GPC3 function, these antibodies can inhibit the growth of HCC cells, thereby decreasing the ability of tumors to grow and metastasize. Furthermore, by using the antibodies to target a toxin to only those cells that express GPC3, cancer cells can be eliminated while allowing healthy, essential cells to remain unharmed. Thus, monoclonal antibodies to GPC3 (and corresponding immunotoxins) represent a novel therapeutic candidate for treatment of HCC, as well as other cancers associated with the differential expression of GPC3.

Applications:

- Therapeutic candidates against cancers that overexpress GPC3;
- Antibodies for killing cancer cells by inhibiting GPC3-based cell signaling, thereby inhibiting tumor cell growth;
- Immunotoxins for killing cancer cells through the action of a toxic agent;
- Diagnostics for detecting cancers associated with GPC3 overexpression;
- Specific cancers include hepatocellular cancer (HCC), melanoma, thyroid cancer, lung squamous cell carcinoma, Wilms' tumor, neuroblastoma, hepatoblastoma, and testicular germ-cell tumors.

Advantages:

- Monoclonal antibodies create a level of specificity that can reduce deleterious side-effects;
- Multiple treatment strategies available including the killing of cancer cells with a toxic agent or by inhibiting cell signaling;
- Non-invasive and potentially non-liver toxic alternative to current HCC treatment strategies.

Development Status: Preclinical stage of development; cell culture data with HCC cells.

Inventors: Mitchell Ho (NCI) *et al.*

Patent Status: U.S. provisional application 61/477,020 (HHS technology reference E–130–2011/0–US–01).

For more information, see:

- M Feng *et al.* Recombinant soluble glypican 3 protein inhibits the growth of hepatocellular carcinoma *in vitro.* Int J Cancer 2011 May1;128(9):2246–2247, doi 10.1002/ijc.25549. [PMID: 20617511].
- SI Zitterman *et al.* Soluble glypican 3 inhibits the growth of hepatocellular