more deaths, with 24 percent in the U.S., than any other cause.

• Cerebral ischemia is the third leading cause of death after heart diseases and cancer.

• Decreased blood flow underlies a significant number of chronic diseases that account for the majority of morbidity and mortality for elderly adults in this country.

• Cancer patients and traumatic injury victims requiring reconstructive surgery.

• Burn patients requiring skin transplants.

• Organ transplant patients.

Development Status: Early-stage of development (*in vivo* data available in mice and pigs).

Inventors: Jeff S. Isenberg *et al.* (NCI).

Patent Status: PCT Application No. PCT/US2007/080647 filed 5 Oct 2007, which published as WO 2008/060785 on 22 May 2008 (HHS Reference No. E–227–2006/5–PCT–01).

Licensing Status: Available for licensing.

Licensing Contact: Charlene A. Sydnor, PhD; 301–435–4689; *sydnorc@mail.nih.gov.*

Collaborative Research Opportunity: The National Cancer Institute Center for Cancer Research, Laboratory of Pathology is seeking statements of capability or interest from parties interested in collaborative research to further develop, evaluate, or commercialize therapeutics targeting CD47 or thrombospondin-1. Please contact John D. Hewes, PhD at 301–435–3121 or *hewesj@mail.nih.gov* for more information.

Total Synthesis of Northebaine, Normorphine, Noroxymorphone Enantiomers and Derivatives via N-Nor Intermediates

Description of Technology: A new synthetic process has been found in which nordihydrocodeinone, an early intermediate in the total synthesis of codeine and related compounds, is easily formed into a number of N-nor compounds. These N-nor compounds can be used as precursors in the formation of narcotics, narcotic antagonists, or narcotic agonist-antagonists.

The manufacture of drugs of this type, such as northebaine or normorphine, can now be done without the use of thebaine as starting material. The syntheses have fewer steps than previous methods, and also have high yields. In addition, very significant simplification of existing thebaine based processes for the manufacture of opiates can be expected.

Applications: Potential new methodology for the synthesis of intermediates for drugs including naloxone, naltrexone, percodan and nalbuphine.

Market:

• More than a quarter of Americans suffer daily pain, a condition that costs the U.S. about $60 billion a year in lost productivity.

• Americans spent about $2.6 billion in over-the-counter pain medications and another nearly $14 billion on outpatient analgesics in 2004.

• Worldwide, nearly 300 million people are believed to suffer from chronic pain.

Inventors: Kenner C. Rice *et al.* (NIDDK)

Patent Status:

HHS Reference No. E–012–1986/1—

• Australian Patent 642447 issued 15 Feb 1994.

• Japanese Patent 2694156 issued 12 Sept 1997.

• Canadian Patent 2067200 issued 30 Jun 1998.

• European Patent 0496830 issued 31 Mar 1999 in Austria, Switzerland, Germany, Denmark, Greece, Luxembourg, Spain, Belgium, The Netherlands, Sweden, France, Italy and United Kingdom.

HHS Reference No. E–012–1986/2—

• United States Patent 5,668,285 issued 16 Sept 1997.

Licensing Status: Available for licensing.

Licensing Contact: Charlene A. Sydnor, PhD; 301–435–4689; *sydnorc@mail.nih.gov.*

Dated: August 18, 2008.

Richard U. Rodriguez,

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

[FR Doc. E8–19914 Filed 8–27–08; 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.

Botulinum Toxoid

Description of Technology: Vaccination is the only approach that can be used to prevent botulism. A pentavalent botulinum toxoid comprised of formalin-detoxified botulinum neurotoxin (BoNT) BoNT/A, B, C, D and E hemagglutinin (Hmg) complexes has been used to immunize laboratory and military personnel since 1961, but this has never been licensed by the United States Food and Drug Administration (FDA). Vaccination immediately after toxin exposure has no protective benefit because the immune response is relatively slow compared to the rate of intoxication. The only treatment that is available upon intoxication is antibody therapy, which entails the injection of equine-derived botulinum antitoxin (BAT) or human-derived botulinum immunoglobulin (BIG) to remove toxin from the blood. Antibody therapy does not alleviate symptoms of botulism, but can limit the amount of toxin that enters nerve terminals and thus may lessen the severity and shorten the duration of paralysis.

Since a vaccine can be used to either protect a human population or produce a BAT or BIG product, it is important to have reliable methods to evaluate the antigenic integrity of botulinum vaccines. An *in vitro* assay that can serve in this capacity would be useful for evaluating the consistency of the antigen throughout the manufacturing process, as well as generating data that may reduce *in vivo* testing.

Available for licensing are a variety of new toxoids useful as botulinum vaccine antigens, for BAT or BIG production, or for development of tests to evaluate antigenicity of botulinum vaccines. The toxoids of the invention are derived from the Serotype A and B 150 kDa neurotoxin proteins. The resulting toxoids are antigenically identical to the native toxin as measured by inhibition ELISA in spite of showing

a reduction of toxicity by more than 100,000-fold. Sandwich ELISA analysis indicated that the featured toxoids were two- to three-fold less antigenic than the native neurotoxin compared to commercially available toxoids, which were about 100-fold less antigenic.

Preclinical studies have been performed using the toxoids of the invention. Mice were immunized twice, on Day Zero (0) and Day Fourteen (14). By Day Twenty-Eight (28), relatively high toxin-specific IgG titers were detected in animals that had received any of the in-house toxoids, with greater than 99% being IgG1 and the remainder IgG2. These immunized mice remained asymptomatic after being challenged with Fifty (50) to One Million (1,000,000) median lethal dose (LD50) units of the 900 kDa neurotoxin. In contrast, animals immunized with several different batches of commercially available toxoids did not develop measurable toxin-specific antibody titers; however, these mice did survive neurotoxin challenges with Two (2) LD50 units, but died when challenged with Six (6) LD50 units.

This application claims the formalin-detoxified botulinum compositions described above and an in vitro method for characterizing the toxoids. Also claimed are methods of making the botulinum compositions, and methods of producing antitoxin to botulinum toxin.

Applications: ELISA development, production of equine or human-derived botulinum antitoxin, development of next generation botulism vaccines.

Development Status: Toxoids have been prepared and preclinical studies have been performed. Standard antibody reagents for ELISA assay development have been prepared.

Inventors: James E. Keller (FDA/CBER).

Publication: JE Keller. Characterization of New Formalin Botulinum Neurotoxin Toxoids. Clin Vaccine Immunol. 2008 Jul 30; Epub ahead of print, doi:10.1128/CVI.00117–08.

Patent Status: U.S. Provisional Application No. 61/036,904 filed 14 Mar 2008 (HHS Reference No. E–325–2007/0–US–01).

Licensing Status: Available for exclusive or non-exclusive licensing.

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

Collaborative Research Opportunity: The FDA Center for Biologics Evaluation and Research is seeking statements of capability or interest from parties interested in collaborative research to further develop, evaluate, or commercialize botulinum toxoids. Please contact Alice Welch, PhD at 301–827–0359 or *Alice.Welch@fda.hhs.gov* for more information.

Magnetic Resonance Imaging Methods and Systems for Estimating Cone of Uncertainty

Description of Technology: In diffusion tensor MRI imaging it is desirable to determine and display the fiber tract dispersion, e.g., the eigenvectors and the associated uncertainties. For example, the unit eigenvector may be displayed with a cone of uncertainty around its tip. This conveys the notion that the direction of fiber is not known precisely. However, the known methods are directed to computation and visualization of a circular cone of uncertainty. These methods are suitable for practical computation and visualization of an elliptical cone of uncertainty. The current invention overcomes this problem by providing (1) a reconstruction procedure to construct the covariance matrix of a major eigenvector for each voxel of a region of interest of a subject, (2) a visualization technique to visualize the elliptical cone of uncertainty of the eigenvector, and (3) two reconstruction procedures to compute the normalized areal and circumferential measures of the elliptical cone of uncertainty. The methods can be used to diagnose medical disorders associated with anomalous changes in water diffusion. The methods can also be used in applications in material science and earth science (geomagnetism).

Applications: Magnetic Resonance Imaging; Diagnostics; Material science; Earth science (Geomagnetism).

Inventor: Cheng Guan Koay (NICHD).

Publications:

1. CG Koay *et al.* The elliptical cone of uncertainty and its normalized measures in diffusion tensor imaging. IEEE Trans Med Imaging. 2008 Jun;27(6):834–846.

2. CG Koay *et al.* Error propagation framework for diffusion tensor imaging via diffusion tensor representations. IEEE Trans Med Imaging. 2007 Aug;26(8):1017–1034.

3. CG Koay *et al.* A unifying theoretical and algorithmic framework for least squares methods of estimation in diffusion tensor imaging. J Magn Reson. 2006 Sep;182(1):115–125.

Patent Status: U.S. Provisional Application No. 60/996,169 filed 05 Nov 2007 (HHS Reference No. E–273–2007/0–US–01).

Licensing Status: Available for licensing.

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

Collaborative Research Opportunity: The NICHD, Section on Tissue Biophysics and Biomimetics, is seeking statements of capability or interest from parties interested in collaborative research to further develop, evaluate, or commercialize this technology. Please contact Alan E. Hubbs, PhD at 301–594–4263 or *hubbsa@mail.nih.gov* for more information.

Dated: August 18, 2008.

Richard U. Rodriguez,

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

[FR Doc. E8–19915 Filed 8–27–08; 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.

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Radiotracers for Imaging Cannabinoid Sub-Type1 (CB_1) Receptor

Description of Technology: The present invention relates to novel radiolabeled compounds for imaging cannabinoid sub-type 1 (CB_1) receptors in brains of mammals, particularly humans, using positron emission tomography (PET) or single photon emission computed tomography