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## **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.

**ADDRESS:** 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.

## **Nonpathogenic Bacteria, *Paenibacillus alvei*, Useful as a Natural Biocontrol Agent for Elimination of Food-borne Pathogenic Bacteria**

**Description of Technology:** This newly isolated non-pathogenic bacterial strain (TS-15) has shown the ability to kill or inhibit a wide variety of harmful bacteria including many of the most common food-borne pathogens such as *Salmonella*, *Escherichia*, *Listeria*, *Shigella*, *Enterobacter* and *Staphylococcus*. The TS-15 strain may provide a natural low cost means to help protect the food supply. The strain may be used as a biocontrol agent in the form of a pesticide or pretreatment to soils in which fruits and vegetables are grown. Preventative use of the TS-15 strain in biocontrol measures may prevent many of the millions of illnesses in the U.S. that are caused by food-borne pathogens each year. Such prevention may also reduce the associated costs of treatment for such illnesses. Furthermore, isolation and development of the antibiotic compounds produced by the TS-15 strain may yield useful new compositions to help treat bacterial illness, including infections by some pathogens resistant to standard antibiotics.

### **Potential Commercial Applications:**

- Agriculture - pesticide
- Medicine - antibiotic

**Competitive Advantages:** Low cost natural means of prevention of many food-borne bacterial illnesses

**Development Stage:** Early-stage

**Inventors:** Eric Brown (FDA), Jie Zheng (FDA), and Alex Enurah

**Intellectual Property:** HHS Reference No. E-042-2011/0 — U.S. Provisional Application No. 61/488,271 filed 20 May 2011

**Licensing Contact:** Tedd Fenn; 301-435-5031; [Tedd.Fenn@nih.gov](mailto:Tedd.Fenn@nih.gov)

**Collaborative Research Opportunity:** The FDA Center for Food Safety and Applied Nutrition is seeking statements of capability or interest from parties interested in collaborative research to further develop, evaluate or commercialize *Paenibacillus alvei* (TS-15). For collaboration opportunities, please contact Alice Welch at [alice.welch@fda.hhs.gov](mailto:alice.welch@fda.hhs.gov).

### **Glass Capillary Arrays for Calibration, Validation, and Quality Assurance of Quantitative Measurements from Diffusion MRI Applications**

**Description of Technology:** NIH scientists have developed a tool for calibration and quality assurance for diffusion MRI applications. These Glass Capillary Arrays (GCAs) allow reliable means for instrument calibration and data measurement validation of various MRI scanning parameters. A variety of GCA conformations is available, so they have broad utility in MRI applications ranging from material sciences to clinical and biological MRI.

#### **Potential Commercial Applications:**

- Calibration, quality assurance, and quality control for diffusion MRI applications using physics and mathematics algorithms combined with known GCA properties
- GCAs come in various diameters and thicknesses, so can be utilized in a wide range of sciences (material and biological)
- Provides known standards for adjustment of various parameters, including magnetic field gradient, magnetic field homogeneity, and radiofrequency pulse

**Competitive Advantages:**

- Allows sufficient quality assurance and instrument calibration not previously available for advanced diffusion MRI
- GCAs are non-toxic and biologically and environmentally safe, so can be stored without special permits or requirements

**Development Stage:** Prototype**Inventors:** Ferenc Horkey, et al. (NICHD)**Intellectual Property:** HHS Reference No. E-202-2010/0 — U.S. Provisional Application No. 61/536,032 filed 18 Sep 2011**Licensing Contact:** John Stansberry, Ph.D.; 301-435-5236;[stansbej@mail.nih.gov](mailto:stansbej@mail.nih.gov)**Diffusion MRI of Beating Hearts and Other Moving Tissues in Live Patients**

**Description of Technology:** Diffusion Tensor Imaging (DTI) is an improved form of Magnetic Resonance Imaging (MRI) that provides microscopic details about tissue structure based on water diffusion. DTI is commonly used to visualize the brain when examining patients with neurological disorders or strokes. Currently, DTI faces technical limitations preventing imaging of moving tissues, such as the beating heart, spinal cord, and base of the brain. The NIH inventors have established an improved method allowing application of DTI to moving tissues. Using DTI to examine patients' hearts will allow for better detection of location and severity of ischemia and for probing general muscle structure and integrity. This method can be applied to various diffusion models including Diffusion Weighted Imaging (DWI).

**Potential Commercial Applications:**

- Heart disease diagnosis
- Evaluating new drugs for effects on heart
- Planning surgical procedures
- Imaging spinal cord, base of brain, and periventricular zones
- Enhanced imaging of other tissues

**Competitive Advantages:**

- Application of state-of-the-art DTI to a wider range of tissues
- Works with multiple diffusion models including DWI

**Development Stage:** Early-stage

**Inventor:** Peter J. Basser (NICHD)

**Publication:** Rohde G, et al. Comprehensive approach for correction of motion and distortion in diffusion-weighted MRI. Magn Reson Med. 2004 Jan;51(1):103-114. [PMID 14705050]

**Intellectual Property:** HHS Reference No. E-168-2009/0 — U.S. Provisional Application No. 61/523,108 filed 12 Aug 2011

**Related Technologies:**

• HHS Reference No. E-203-1993/0 — U.S. Patent No. 5,539,310 issued 23 Jul 1996; PCT Application No. PCT/US94/08842 filed 05 Aug 1994

• HHS Reference No. E-079-2003/1 — U.S. Application No. 12/114,713 filed 02 May 2008

• HHS Reference No. E-079-2003/0 — U.S. Patent No. 7,643,863 issued 05 Jan 2010; PCT Application No. PCT/US2004/22027 filed 08 Jul 2004

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