The invention relates to an imaging system comprising a fluorescence microscope and an annular filter. The microscope has an associated light source for providing an illuminated light path to an objective of the microscope for illuminating a specimen positioned on the microscope stage. The annular filter is positioned at a back focal plane of the illuminating light path such that only hollow cone of steep angled excitation light is delivered to the specimen and excluding low angle and axial light rays from entering the objective. Excitation illumination of the specimen occurs only in a limited region of the specimen corresponding to the focal volume where the light rays of the hollow cone of illumination converge. This modified configuration of the microscope and aperture increases signal to noise ratio of the resulting fluorescent image by reducing out of focus light (*i.e.*, scattered light). Photo-damage and photo-bleaching are also minimized.

Diffusion Tensor and q-Space MRI Specimen Characterization

Peter Basser (NICHD), Yaniv Assaf
DHHS Reference No. E–079–2003/0–US–01 filed 08 Jul 2003
Licensing Contact: Michael Shmilovich; 301/435–5019; *shmilovm@mail.nih.gov*

This new in vivo magnetic resonance imaging (MRI) method, especially suited for the characterization of brain white matter, combines q-space and diffusion tensor imaging concepts: Diffusion within axons is modeled as hindered diffusion parallel to an axis of the axon and restricted diffusion perpendicular to the axis. Diffusion exterior to axons is modeled as hindered diffusion with differing diffusivities parallel and perpendicular to the nerve axis. Diffusion weighted magnetic resonance images are obtained from specimens at different q values (magnitude and direction). Parameters associated with tissue microstructure are then extracted, such as the intra and extra-axonal principal diffusivities and their corresponding principal directions, and the volume fractions of intra and extra-axonal space. Improved angular resolution of fiber tracts orientation can be obtained for tractography studies, and more microstructural information can be gleaned both diagnostic and therapeutic purposes than from conventional diffusion tensor MRI.

Method and System for Developing and Querying a Sequence Driven Contextual Knowledge Base

Michael Waters, James Selkirk, and Raymond Tennant (NIEHS)
U.S. Patent Application Serial No. 10/452,384 filed 03 Jun 2003 (DHHS Reference No. E–026–2003/0–US–01)
Licensing Contact: Michael Shmilovich; 301/435–5019; *shmilovm@mail.nih.gov*

Available for licensing is a system of predictiive toxicology and pharmacology in the form of a multigenome/multispecies knowledge base incorporating gene and amino acid sequences, molecular expression data, gene/protein functional annotation, domain specific ontologies, and/or literature mapping. The present invention integrates large volumes of disparate information, such as genomic, proteomic, and/or toxicological knowledge in a framework that serves as a continually changing heuristic engine for predictive toxicology. The invention allows characterization of the effects of, for example, chemicals or stressors across species as a function of dose, time, and phenotype severity.

This research is described, in part, in Waters *et al.*, Environ. Health Perspect. 111 (1T): 15–18 (January 2003), and republished in Environ. Health Perspect. Toxicogenomics 111 (6): 811–824 (May 2003).

Pattern Recognition of Whole Cell Mass Spectra

Jon G. Wilkes (FDA), Alexandre Schvartsburg (NCTR)
DHHS Reference No. E–017–2003/0–US–01 filed 06 Jun 2003
Licensing Contact: Michael Shmilovich; 301/435–5019; *shmilovm@mail.nih.gov*

This invention analyzes mass spectra (MALDI, SELDI) from a plurality of microorganism sources and biological agents. The invention is useful for diagnosing disease, anticipating epidemic outbreaks, monitoring food supplies for contamination, regulating bioprocessing operations, and is especially useful for detecting agents of war. The invention dramatically improves spectral analysis through deconvolution of complex spectra by collapsing multiple peaks showing different molecular mass originating from the same molecular fragment into a single peak. The differences in molecular mass are apparent differences caused by different charge states of the fragment and/or different metal ion adducts of one or more of the charge states. The deconvoluted spectrum is compared to a library of mass spectra acquired from samples of known identity to unambiguously determine the identity of one or more components of the sample undergoing analysis.

Stem Cell Culture, Monitoring and Storage System

Rea Ravin (NINDS), James Sullivan (ORS), Ronald Mckay (NINDS).
U.S. Patent Application Serial No. 10/334,565 filed 30 Dec 2002 (DHHS Reference No. E–171–2002/0–US–01)
Licensing Contact: Michael Shmilovich; 301/435–5019; *shmilovm@mail.nih.gov*

Available for licensing is a closed chamber that provides an environment for long-term culture of stem cells, stems cells of central nervous system (CNS) origin, embryonic stem cells, and other cells. The chamber is designed with top and bottom mounted cover slips that permit the observation of cells in culture under an optical microscope. This chamber has the ability to control volume and pressure of liquids and gases by an inlet tube and outlet tubes at two different vertical positions. The chamber also includes a ball joint assembly that allows for the manipulation of a glass microcapillary/microelectrode to come in close contact with the developing cells. This microcapillary/microelectrode assembly can be used to either administer growth factors (*e.g.*, monitoring growth factor levels such as BMP and CNTF) and also for electrical recording from the cells.

Dated: August 4, 2003.

Steven M. Ferguson,

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

[FR Doc. 03–20559 Filed 8–12–03; 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, DHHS.

ACTION: Notice.

SUMMARY: The inventions listed below are owned by agencies 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.

Antibodies That Specifically Recognize SUMO-Conjugated Proteins

Dr. Mary Dasso (NICHD).
U.S. Provisional Application Serial No. 60/438,685 filed 08 Jan 2003 (DHHS Reference No. E–066–2002/0–US–01).
Licensing Contact: Marlene Shinn-Astor; 301/435–4426; *shinnm@mail.nih.gov*

SUMO–1 is an ubiquitin-like heat shock protein that can be covalently conjugated to other proteins through an isopeptide linkage. This technology describes polyclonal antibodies that recognize SUMO–1 conjugated proteins, including conjugated RanGAP1. These antibodies could be used as a diagnostic tool to test for diseases that contain SUMO–1 mis-regulation with further development. It is also foreseen that they could be used in large-scale screening of small molecule libraries to find compounds capable of either inhibiting or enhancing the SUMO–1 conjugation pathway.

Modulators of Nuclear Hormone Receptor Activity: Novel Compounds, Diverse Applications for Infectious Diseases, Including Anthrax (*B. anthracis*)

E. M. Sternberg (NIMH), J. I. Webster (NIMH), L. H. Tonelli (NIMH), S. H. Leppla (NIAID), and M. Maoyeri (NIAID).
DHHS Reference No. E–247–2002/0–US–01 filed 18 October 2002.
Licensing Contact: Peter Soukas; 301/435–4646; *soukasp@mail.nih.gov.*

Technology summary and benefits: Nuclear hormones such as glucocorticoids dampen inflammatory responses, and thus provide protection to mammals against inflammatory disease and septic shock. The Anthrax lethal factor represses nuclear hormone receptor activity, and thus may contribute to the infectious agent causing even more damage to the host. This observation can be exploited to find new means of studying and interfering with the normal function of nuclear hormone receptors. Scientists at NIH have shown that under the appropriate conditions, these molecules can be used to modulate the activity of various nuclear hormone receptors. Identifying useful agents that modify these important receptors can provide relief in several human disorders such as inflammation, autoimmune disorders, arthritis, malignancies, shock and hypertension.

Long-term potential applications: This invention provides novel agents that can interfere with the action of nuclear hormone receptors. It is well known that malfunction or overdrive of these receptors can lead to a number of diseases such as enhanced inflammation; worse sequelae of infection including shock; diabetes; hypertension and steroid resistance. Hence a means of controlling or fine-tuning the activity of these receptors can be of great benefit. Current means of affecting steroid receptor activity are accompanied by undesirable side-effects. Since the conditions for which these treatments are sought tend to be chronic, there is a critical need for safer drugs that will have manageable side-effects.

Uniqueness or innovativeness of technology: The observation that the lethal factor from Anthrax has a striking effect on the activity of nuclear hormone receptors opens up new routes to controlling their activity. The means of action of this repressor is sufficiently different from known modulators of hormone receptors (*i.e.,* the classical antagonists). For instance, the repression of receptor activity is non-competitive, and does not affect hormone binding or DNA binding. Also, the efficacy of nuclear hormone receptor repression by Anthrax lethal factor is sufficiently high that the pharmacological effect of this molecule is seen at vanishingly small concentrations. Taken together, these attributes may satisfy some of the golden rules of drug development such as the uniqueness or novelty of the agent's structure, a low threshold for activity, high level of sophistication and knowledge in the field of enquiry, and the leeway to further refine the molecule by rational means.

Stage of Development: In vitro studies have been completed, and a limited number of animal studies have been carried out.

Method for the Treatment of Multiple Sclerosis

Roland Martin *et al.* (NINDS).
U.S. Provisional Application Serial No. 60/393,021 filed 28 Jun 2002 (DHHS Reference No. E–143–2002/0–US–01), PCT/US02/38290 filed 27 Nov 2002 (DHHS Reference No. E–143–2002/0–PCT–02), U.S. Patent Application filed 27 Jun 2003 (DHHS Reference No. E–143–2002/0–US–03), and PCT/US03/20428 filed 27 Jun 2003 (DHHS Reference No. E–143–2002/0–PCT–04).
Licensing Contact: Catherine Joyce 301/435–5031; e-mail: *joycec@mail.nih.gov.*

The invention relates to the discovery that humanized antibodies to the interleukin-2 receptor (IL–2R) such as (daclizumab) are effective in treating multiple sclerosis (MS). In particular, it has been discovered that patients who have failed to respond to therapy with interferon-beta show dramatic improvement when treated with daclizumab, with patients showing both a reduction in the total number of lesions and cessation of appearance of new lesions during the treatment period. Daclizumab is effective both in combination with interferon-beta and alone.

The above-mentioned invention is available for licensing on an exclusive or non-exclusive basis.

Dated: August 4, 2003.

Steven M. Ferguson,

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

[FR Doc. 03–20560 Filed 8–12–03; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

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