intrathecal administration of TIP39 cause nocifensive responses. Intrathecal delivery of an antibody that sequesters TIP39 decreases sensitivity in several acute nociceptive assays, and administration of TIP39 potentiates responses in these same tests. Neurochemical changes that occur in neurons in outer layers of the dorsal horn in response to intense pain or injury may lead to manifestations of chronic pain, including hyperalgesia and allodynia. As TIP39 potentiates pain perception and increases cAMP, the PTH2 receptor system may be involved in the transition from acute to chronic pain. Novel drugs which block this system could thus be useful in treating acute or chronic pain. The invention described and claimed in the pending patent application provides novel methods of treating pain and methods of screening to find new and useful drugs acting on this newly discovered pain modulation system.

Development of a Plant Derived Recombinant Subunit Vaccine Candidate Against Hepatitis C

Lev G. Nemchinov and Jerry M. Keith (NIDCR)

DHHS Reference No. E–249–01/0

Licensing Contact: Carol Salata; 301/496–7735 ext. 232; *salatac@od.nih.gov.*

Hepatitis C virus (HCV) is a major cause of acute and chronic hepatitis with over 180 million cases worldwide. Development of a vaccine to combat HCV has been difficult. Presently, the virus cannot be grown in tissue culture and there is no vaccine or effective therapy against this virus. This technology relates to the development of an experimental plant-derived subunit vaccine against HCV. A tobamoviral vector was engineered to encode a consensus sequence of hypervariable region 1 (HVR1), a potential neutralizing epitope of HCV, which was genetically fused to the C-terminus of the B subunit of cholera toxin (CTB). This epitope was selected from the amino acid sequences of HVR1 ''mimotopes'' previously derived by phage display technology. The nucleotide sequence encoding this epitope was designed utilizing plant codons. This mimotope is capable of inducing cross-neutralizing antibodies against different variants of the virus. Plants infected with recombinant tobacco mosaic virus (TMV) engineered to express the HVR1/CTB chimeric protein, contained intact TMV particles and produced the HVR1 consensus peptide fused to the functionally active, pentameric B subunit of cholera toxin. Plant-derived HVR1/CTB reacted with HVR1-specific monoclonal antibodies and immune sera from individuals infected with virus from four of the major genotypes of HCV. Intranasal immunization of mice with a crude plant extract containing the recombinant HVR1/CTB protein elicited both anti-CTB serum antibody and anti-HVR1 serum antibody which specifically bound to HCV virus-like particles. Using plant-virus transient expression to produce this unique chimeric antigen will facilitate the development and production of an experimental HCV vaccine. A plant-derived recombinant HCV vaccine can potentially reduce expenses normally associated with production and delivery of conventional vaccines.

Endotracheal Tube Using Leak Hole to Lower Dead Space

Theodor Kolobow (NHLBI)

Serial No. 09/967,903 filed Sep 28, 2001

Licensing Contact: Dale Berkley; 301/496–7735 ext. 223; e-mail: *berkleyd@od.nih.gov.*

The invention is a tracheal tube ventilation apparatus which, through the use of one or more tube leak holes or connecting tubes positioned in the wall of the endotracheal tube above the larynx, is able to efficiently rid the patient of expired gases and promote healthier breathing. A first stage of the apparatus has a smaller diameter such that it fits within the confined area of the lower trachea and the second stage has a larger diameter, which fits properly within the larger diameter of the patient's pharynx. The endotracheal tube is preferably wire reinforced and ultra-thin walled so as to reduce airway resistance. The invention substantially reduces endotracheal dead space and is expected to benefit those patients with both early and late stage acute respiratory failure, and reduce or obviate the need for mechanical pulmonary ventilation in many patients.

Dated: March 5, 2002.

Jack Spiegel,

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

[FR Doc. 02–5931 Filed 3–12–02; 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 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.

Method and Apparatus to Improve an MRI Image

Peter Kellman and Elliot McVeigh (NHLBI)

DHHS Reference No. E–361–01/0 filed Oct 19, 2001

Licensing Contact: Dale Berkley; 301/496–7735 ext. 223; e-mail: *berkleyd@od.nih.gov*

The invention is a method for improving image quality in MR imaging methods using the SENSE (SENSitivity Encoding) method, which is known to have degraded image quality due to numerical ill-conditioning (so called g-factor loss). The invention improves the numerical conditioning by means of an adaptive regularization (matrix conditioning), thereby improving image quality for a given scan time. This is accomplished by adaptively adjusting the regularization parameter for each pixel position to achieve a target ghost artifact suppression. In this manner, a higher degree of matrix conditioning is used in regions which have less artifact, thus improving the SNR in these regions.

Use of CpG Oligodeoxynucleotides to Encourage Angiogenesis

Dennis M. Klinman (FDA), Mei Zheng (EM), Barry T. Rouse (EM)

DHHS Reference No. E–328–01/0 filed Dec 20, 2001
Licensing Contact: Peter Soukas; 301/496–7056 ext. 268; e-mail: *soukasp@od.nih.gov*

This invention relates to the field of angiogenesis, more specifically to the use of CpG oligonucleotides to promote angiogenesis. Angiogenesis, the process of developing a hemovascular network, is essential for the growth of solid tumors and is a component of normal wound healing and growth processes. It has also been implicated in the pathophysiology of atherogenesis, arthritis, corneal neovascularization, and diabetic retinopathy. Angiogenesis factors play an important role in wound healing and likely play a role in the development of malignancies; hence, it would clearly be advantageous to identify new angiogenic agents.

CpG oligodeoxynucleotides (ODNs) express a wide range of biological activities. They are potent vaccine adjuvants, anti-allergens, and trigger a protective innate immune response. Several recent reports indicate that CpG ODN also stimulate cells of the central nervous system. Although CpG ODN have many potential uses, their potential to induce angiogenesis has not been previously recognized. The inventors have shown that bioactive CpG motifs induce dose-dependent neovascularization in the corneas of mice. The invention claims methods for stimulating angiogenesis using CpG ODNs, methods for inducing the production of VEGF (Vascular Endothelial Growth Factor) using CpG ODN, and a model system for screening potential anti-angiogenic agents.

Vaccine for Protection Against Shigella sonnei Disease

Dennis J. Kopecko, De-Qi Xu, John O. Cisar (FDA)
DHHS Reference No. E–210–01/0 filed Jan 16, 2002
Licensing Contact: Peter Soukas; 301/496–7056 ext. 268; e-mail: *soukasp@od.nih.gov*

Shigellosis is a global human health problem. Transmission usually occurs by contaminated food and water or through person-to-person contact. The bacterium is highly infectious by the oral route, and ingestion of as few as 10 organisms can cause an infection in volunteers. An estimated 200 million people worldwide suffer from shigellosis, with more than 650,000 associated deaths annually. A recent CDC estimate indicates the occurrence of over 440,000 annual shigellosis cases in the United States alone, approximately eighty percent (80%) of which are caused by *Shigella sonnei. Shigella sonnei* is more active in developed countries. *Shigella* infections are typically treated with a course of antibiotics. However, due to the emergence of multidrug resistant *Shigella* strains, a safe and effective vaccine is highly desirable. No vaccines against *Shigella* infection currently exist. Immunity to *Shigellae* is mediated largely by immune responses directed against the serotype specific O-polysaccharide. Claimed in the invention are compositions and methods for inducing an immunoprotective response against *S. sonnei.* Specifically, an attenuated bacteria capable of expressing an *S. sonnei antigen* comprised of the *S. sonnei* form I O-polysaccharide expressed from the *S. sonnei* rfb/rfc gene cluster is claimed. The inventors have shown that the claimed vaccine compositions showed one hundred percent (100 %) protection against parenteral challenge with virulent *S. sonnei* in mice.

Method for Determining Sensitivity to a Bacteriophage

Carl R. Merril (NIMH), Sankar Adhya (NCI), Dean M. Scholl (NIMH)
DHHS Reference No. E–318–00/0 filed Jan 22, 2002
Licensing Contact: Peter Soukas; 301/496–7056, ext. 268; e-mail: *soukasp@od.nih.gov*

Traditionally, chemical antibiotics have been used to treat a variety of bacterial infections. However, bacterial resistance to current antibiotics is an increasingly serious problem in human and veterinary health as well as agriculture. Many experts believe that strains of disease-causing bacteria resistant to all common antibiotics will arise in the next ten to twenty years. Bacteriophages offer a promising therapeutic alternative to antibiotics for these antibiotic resistant bacteria. There are also situations in which bacteriophage may be more suitable than antibiotics to treat infections caused by against antibiotic-sensitive bacteria. Bacteriophages are highly host-specific, thus determining whether a phage would be therapeutically useful against a particular bacterium or strain of bacteria is very important but can be a time-consuming and labor-intensive process.

The current invention claims a method for selecting a therapeutic bacteriophage that would be effective against a particular disease-causing bacteria, comprising a number of bacteriophages containing reporter nucleic acids capable of being expressed when the bacteriophage infects a bacterial cell. These bacteriophages are separately contacted with a sample contaminated by a bacterium. Expression of the reporter is then detected, indicating which bacteriophage has infected a bacterial cell and is thus a potential therapeutic phage against the particular bacteria. Also claimed in the application are kits allowing for the rapid identification of potentially therapeutic bacteriophages.

Dated: March 5, 2002.

Jack Spiegel,

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

[FR Doc. 02–5934 Filed 3–12–02; 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.

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ADDRESSES: Licensing information and copies of the U.S. patent applications listed below may be obtained by contacting Kai Chen, Ph.D., M.B.A., at the Office of Technology Transfer, National Institutes of Health, 6011 Executive Boulevard, Suite 325, Rockville, Maryland 20852–3804; telephone: 301/496–7057 ext. 247; fax: 301/402–0220; e-mail: *ChenK@od.nih.gov.* A signed Confidential Disclosure Agreement will be required to receive copies of the patent applications.

Antiproliferative Actions of Human IGF Binding Protein-3 Mutants That Do Not Bind IGF–I or IGF–II

M.M. Rechler (NIDDK)

[DHHS Reference No. E–048–02/0 filed 17 Dec 2001]

Recent epidemiological studies indicate that increased serum insulin-like growth factor binding protein-3 (IGFBP–3) is associated with decreased