their proliferation. The inhibition of MIF activity *in vitro* is useful to investigate the sequence of events comprising the cell cycle. Issuance of a patent on this invention is currently pending. [*portfolio: Gene-Based Therapies—Therapeutics, oligonucleotide-based therapies, antisense, sequences*]

Cell Tests For Alzheimer's Disease

Alkon, D., Etcheberrigaray, R., Kim, C., Han, Y., Nelson, T. (NINDS)
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Serial No. 08/312,202 (CIP of 08/056,456)

Alzheimer's disease represents the fourth leading cause of death in the United States, killing over 100,000 annually, and afflicting some 4 million Americans. Various reports indicate that the incidence of Alzheimer's disease increases with age and estimate that the prevalence of Alzheimer's disease in people over 80 years of age is between 20 and 50%. Under currently available technology Alzheimer's disease can only be presumptively diagnosed by pathological examination of brain tissue during autopsy in conjunction with a clinical history of dementia. The present invention utilizes newly discovered differences between cells from healthy donors and those with Alzheimer's disease. In particular, differences in the levels of a memory associated GTP-binding protein between cells from health donors and Alzheimer's patients are assessed by immunoassay. Thus, the invention provides a quick and reliable test for assessing whether a patient is suffering from Alzheimer's disease. [*portfolio: Central Nervous System—Diagnostics, in vitro, other*]

Allelic Variation Of The Serotonin 5HT2C Receptor

Lappalainen, J., Linnoila, M., Goldman, D. (NIAAA)
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Serial No. 08/310,271

An allelic variation of the serotonin 5HT2C receptor that is functionally different from the predominant wild-type receptor. One embodiment of this discovery relates to isolated DNA encoding that serotonin 5HT2C receptor wherein the DNA encodes a serine at amino acid position 23 of the receptor. The isolated DNA may, for example, be provided in a recombinant vector. Preferably the isolated DNA has the nucleic acid sequence of SEQ ID NO:1.

This invention may make it possible to find biochemical and genetic variables that predict vulnerability to psychiatric disorders, including antisocial personality, and therefore predict these behaviors and also facilitate implementation of preventative and therapeutic measures. The patent application is pending, and the technology is available through a non-exclusive license. [*portfolio: Central Nervous System-Research Tools and Reagents, receptors and cell lines*]

Sulfo Derivatives Of Adenosine

Jacobson, K., Maillard, M.C. (NIDDK)
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Serial No. 08/278,704 (FWC of 07/914,428)

A newly-developed, novel class of adenosine compounds are valuable for the prevention or treatment of injuries related to oxygen deprivation, or ischemia. Adenosine has numerous physiologic roles in the body including increasing tissue oxygen supply. Certain compounds that bind to adenosine receptors in the body have been found to protect against ischemia-induced tissue injury. Previously, however, adenosine agonists that have been tested for treating or preventing such injuries have caused serious behavioral effects, making them too risky for use in humans. This new class of adenosine agonist are sulfo derivatives of adenosine and do not effectively cross the blood-brain barrier. Thus, they can be used effectively as adenosine agonists—especially in preventing ischemia-induced tissue damage—without the toxic side effects.

Stannylated 3–Quinuclidinyl Benzilates And Methods For Preparing *AQNB

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Serial No. 08/229,837

A unique method for synthesizing tomographic imaging agents has been developed that offers to significantly improve the use of tomographic imaging in studying the brain and other parts of the nervous system. Muscarinic cholinergic receptors (mAChrs) play a vital role in a number of psychological and behavioral responses including sleep, avoidance behavior, learning, and memory. Single-photon emission-computed tomography (SPECT) has emerged as a leading diagnostic tool for diagnosing and researching mAChr activity. At present, the potential of SPECT imaging of muscarinic receptors as a diagnostic and analytical tool has not been fully attained, primarily due to the high cost and difficulty of preparing the tomographic imaging agent *IQNB. This invention overcomes such limitations by halogenating, particularly iodinating, stannylated 3-quinuclidinyl benzilate compounds, which converts them to *AQNB (wherein *A is a halogen). The halogenation of stannylated 3-quinuclidinyl benzilates proceeds in as little as five minutes compared to up to an hour with previous methods. In addition, radiolabeling with this method produces yields of *AQNB as high as 80 percent. [portfolio: Central Nervous System—Research Tools and Reagents; Central Nervous System—Diagnostics]

Method Of Adenovirus-Mediated Cell Transfection

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Serial No. 08/191,669

Development of an efficient and less toxic method for adenovirus-mediated cell transfection offers to significantly improve efforts at correcting genetic disorders and other diseases through gene augmentation therapy. Adenoviruses are useful as a vector for gene therapy, since they do not require the host cell proliferation that is necessary to employ retroviral vectors. In addition, adenoviral vectors have low recombination event frequencies. Adenovirus exhibits tropism for the respiratory epithelium, and can infect almost every human tissue including lung, gastrointestinal, liver, brain, salivary glands, kidney, and other tissues. Therefore, adenoviruses are a useful tool in somatic gene therapy of many inheritable and metabolic diseases, particularly those of the lung and gastrointestinal tract. Present approaches for using adenovirus for transfer of nucleic acids are limited in that the specific receptor to the ligand employed (e.g., transferrin) must be present on the cell surface for transfection to be accomplished. Additionally, it was recently discovered that better transfection results are obtained when the DNA is not physically attached to any molecule upon introduction into the cell. This invention overcomes such limitations by incubating the DNA to be transfected with a cationic agent or polycationic liposome and contacting the target cell with the nucleic acids in the presence of adenovirus. Because the nucleic acid(s) is not bound to any molecule capable of effecting its entry into the cell, the transfection is more efficient. Furthermore, no specific ligand need be present for transfection to occur. Issuance of a patent on this invention is currently pending. [portfolio: Gene-Based Therapies—Therapeutics; Gene-Based Therapies—Research Tools and Reagents]