by PHS intellectual property policies (see CRADA: http://ott.od.nih.gov/newpages/crada.pdf).

Licensing Information

This technology was previously advertised in the December 26, 2000 issue of the **Federal Register** as a licensing opportunity [65 FR 81532]. Briefly, the gene and its polymorphisms that result in the Dombrock blood group antigenicity, for the first time, provide a route for reliable blood typing. Products aimed at improving blood typing practices through molecular means, thereby preventing mismatched blood transfusions, can also be developed with this technology. For the sake of completeness, the licensing contact is provided here: John Rambosek; 301/496–7056, ext. 270; fax: 301/402–0220; e-mail: rambosej@od.nih.gov.

Dated: February 5, 2001.

Jack Spiegel,

Director, Division of Technology Development and Transfer, Office of Technology Transfer.

[FR Doc. 01–3603 Filed 2–12–01; 8:45 am]

BILLING CODE 4140–01–M

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.

Potentiation of Antineoplastic Agents Using Sigma 2 Ligands

Keith W. Crawford, Wayne D. Bowen (NIDDK)

DHHS Reference No. E–165–99/0 filed 11 May 2000

Licensing Contact: Catherine Joyce; 301/496–7735 ext. 244; e-mail: joycec@od.nih.gov.

The inventors have developed a therapeutic method of treating cancer through the administration of a sigma-2 receptor ligand, such as CB–184, in combination with the anti-neoplastic drugs, doxorubicin or actinomycin D. The novel combination produces marked tumor cell death at concentrations that produce little or no cytotoxicity when cells are exposed to the drugs alone. The protocol may be effective in treating tumors that are resistant to antineoplastics alone as a result of mutations of the p53 tumor suppressor gene.

Tumor Markers in Ovarian Cancer

Patrice J. Morin, Colleen D. Hough, Cheryl A. Sherman-Baust, Ellen S. Pizer (NIA)

DHHS Reference No. E–138–00/0 filed 03 Apr 2000

Licensing Contact: Catherine Joyce; 301/496–7735 ext. 244; e-mail: joycec@od.nih.gov.

This invention relates generally to the identification of ovarian tumor markers and diagnostic, prognostic and therapeutic methods for their use. The invention is based on the identification of a series of ovarian tumor marker genes that are highly expressed in ovarian epithelial tumor cells and are minimally expressed in normal ovarian epithelial cells.

Imidazoacridones With Anti-Tumor Activity

Cholody et al. (NCI)

DHHS Reference No. E–289–99/0 filed 07 March 2000

Licensing Contact: Girish Barua; 301/496–7735 ext. 263; e-mail: baruag@od.nih.gov.

The present invention relates to novel bifunctional molecules with anti-tumor activity. These agents are composed of an imidazoacridone moiety linked by a nitrogen containing aliphatic chain of various length and rigidity to another aromatic ring system capable of intercalation to DNA.

Previous studies on related symmetrical bis-imidazoacridones revealed that only one planar imidazoacridone moiety intercalates into DNA. The second aromatic moiety which is crucial for biological activity resides in DNA groove, and is believed to interact with DNA-binding proteins (most likely, transcription factors). It was hypothesized that action of bis-imidazoacridone constitute a new paradigm of how small molecules can interfere with gene transcription.

To enhance the biological activity, the inventors have developed unsymmetrical compounds in which one imidazoacridone system with relatively poor DNA-intercalating properties was replaced with much stronger intercalators, such as 3-chloro-7-methoxyacridine or naphthalimide moieties. These new compounds, especially those containing naphthalimide moiety are extremely cytotoxic against variety of tumor cells in vitro (IC50 at low nanomolar range) and kill tumor cells by inducing apoptosis. In vivo, in nude mice xenografted with human tumors, the compounds significantly inhibited growth of such tumors as colon tumor HCT116 and Colo205 as well pancreatic tumors (lines 6.03 and 10.05 freshly established from a patient).

Dated: February 6, 2001.

Jack Spiegel,

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

[FR Doc. 01–3604 Filed 2–12–01; 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

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Confidential Disclosure Agreement will be required to receive copies of the patent applications.

Benzoylalkylindolepyridinium Compounds and Pharmaceutical Compositions Comprising Such Compounds

William G. Rice, Mingjun Huang, Robert W. Buckheit, Jr., David G, Covell, Grzegorz Czerwinski, Christopher Michejda, and Vadim Makarov (NCI)

DHHS Reference No. E–278–98/0 filed 18 Dec 2000

Licensing Contact: Sally Hu; 301/496–7056 ext. 265; e-mail: hus@od.nih.gov.

The present invention provides novel antiviral compounds active against HIV. These compounds, referred to as benzoylalkylindolepyridinium compounds (BAIPs) are effective against HIV isolates that have developed mutations rendering conventional drugs ineffective. BAIPs apparently do not require intracellular phosphorylation nor bind to the reverse transcriptase (RT) active site, which distinguishes their mechanism of action from the dideoxynucleoside (ddN) and acyclic nucleoside phosphonate (ANP) nucleoside analog drugs. ddN and ANP have proven clinically effective against limiting human immunodeficiency virus (HIV) infection, but resistance rapidly emerges due to mutations in and around the RT active site. The BAIPs also may be distinguished from non-nucleoside reverse transcriptase inhibitors (NNRTIs), in part because the BAIPs bind to a different site on the RT enzyme. The usage of NNRTIs is limited by the rapid emergence of resistant strains also. Moreover, unlike the NNRTIs, BAIPs of the present invention have been shown to be effective against HIV–1, HIV–2 and simian immunodeficiency virus (SIV) proliferation. Thus, BAIPs are broadly antiviral, non-nucleoside reverse transcriptase inhibitors (BANNRTIs).

Monoclonal Antibodies Specific for the E2 Glycoprotein of Hepatitis C Virus and Their Use in the Diagnosis, Treatment and Prevention of Hepatitis C

Darren Schofield, Suzanne U. Emerson, Robert H. Purcell, Harvey J. Alter (NIAID)

DHHS Reference No. E–017–01/0 filed 01 Dec 2000

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

Hepatitis C virus is an enveloped, single stranded RNA virus, approximately 50 nm in diameter, that has been classified as a separate genus in the Flaviviridae family. Most persons infected with hepatitis C virus develop chronic infection. These chronically infected individuals have a relatively high risk of developing chronic hepatitis, liver cirrhosis and hepatocellular carcinoma. There is currently no vaccine to prevent hepatitis C virus infection. The present invention relates to human monoclonal antibodies which exhibit immunological binding affinity for the hepatitis C virus E2 glycoprotein and are cross-reactive against different hepatitis C virus strains. These antibodies may be used in passive immunoprophylaxis for the prevention of hepatitis C virus infection and/or in passive immunotherapy for the treatment of hepatitis C.

Cell-Free Assembly of Lentiviral Capsids

Campbell et al. (NCI)

DHHS Reference No. E–287–00/0 filed 01 Dec 2000

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

Dr. Campbell and his colleagues have discovered a novel method of assembling HIV immature capsids from recombinant purified Gag proteins in vitro. Specifically, the discovery is that the presence of certain phosphates is required for assembly of full-sized HIV capsids in vitro. Therefore, compounds which interfere with the effect of these phosphates on virus assembly or that deplete cellular pools of these phosphates, could be effective antiviral agents. This discovery then provides an in vitro screening method of identifying such potential antiviral agents. It also provides techniques for producing full-size virus-like particles in vitro. In fact, Dr. Campbell is the first to report the assembly of authentic viral capsids from full length Gag proteins in a completely defined system. Such proteins could be potentially useful as safe HIV vaccines or for delivery of nucleic acids or pharmacological agents in patients.

Sample Delivery System With Laminar Mixing for Microvolume Biosensing

Peter Schuck (ORS)

DHHS Reference No. E–143–00/0 filed 06 Nov 2000

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

The invention is a sample delivery system that comprises at least two microchannels in fluid communication with a sample chamber containing a biosensor. Biosensing for studying molecular recognition has become an important biophysical tool for biomedical research. The system aspirates a small sample volume into the system's microfluidic channels and applies a periodic oscillatory flow pattern to the sample. This prevents sample depletion in the stagnant layer across the sensor surface and results in efficient mixing of the sample during the biosensor measurement. Because the oscillatory flow pattern does not produce a net transport of the sample with time, there is a very long incubation time of the sensor surfaces with a very small sample volume. The new sample delivery system uses sample volumes of only 3 to 8 microliters, compared to the 25 to 200 microliter volumes of conventional systems, which use cuvette principles or continuous flow microfluidics. The present invention is substantially better than existing systems with respect to biosensor contact time and required sample volume.

In Vivo DNA Engineering Using the Recombination System (red) of Bacteriophage Lambda

Donald Court, Daiguan Yu, E-Chiang Lee, Nancy Jenkins, Neal Copeland (NCI)

DHHS Reference No. E–170–99/0

Licensing Contact: Peter Soukas; 301–496–7056 ext. 268; e-mail: soukasp@od.nih.gov.

Available for licensing through a Biological Materials License Agreement are several E. coli strains developed through a novel recombination system that allows for efficient chromosome engineering in E. coli using electroporated linear DNA. This technique provides for a much greater degree of accuracy and efficiency compared to current restriction endonuclease techniques for DNA engineering. The inventors' system is based on the recombination function designated red in bacteriophage lambda (λ). High recombination efficiency is obtained using a PCR-amplified donor DNA fragment with two flanking 30–40 base pairs of DNA homologous to the targeted DNA. In vivo cloning is accomplished by introducing linear plasmid vectors and linear DNA to be cloned with the segment to be cloned flanked by short homologies to the vector. The linear vector can also be used to subclone DNA segments directly from the bacterial chromosome or genomic BAC (PAC) clones by short homology mediated gap repair. The inventors have shown that when the red function is turned on for fifteen minutes, donor DNA can be recombined with a frequency 104–105 times higher than in a red off-control kept at 32 degrees C. The system is further described in Yu et al., ''An efficient

recombination system for chromosome engineering in Escherichia coli,'' P.N.A.S. 97(11):5978–5983 (2000).

Simian-Human HAV Chimeras Encoding a Hepatitis A Virus Having a Chimeric 2C Protein

G Raychaudhuri, SU Emerson, RH Purcell (NIAID)

Serial No. 60/015,642 filed 19 Apr 1996; PCT/US97/06506 filed 18 Apr 1997; Serial No. 09/171,387 filed 24 Mar 1999

Licensing Contact: Carol Salata, 301/496–7735 ext. 232; e-mail: salatac@od.nih.gov.

The claimed invention provides nucleic acid sequences which encode hepatitis A viruses having a chimeric 2C protein. The chimeric 2C gene consists of sequences from both the human strain and the simian AGM–27 strain. The chimeric virus is a promising candidate for an attenuated hepatitis A virus vaccine which may be more economical than an inactivated vaccine, especially in underdeveloped countries where hepatitis A in endemic. Additional information on the chimeras may be found in Rayachaudhuri et al., ''Utilization of chimeras between human(HM175) and simian(AGM27) strains of hepatitis A virus to study the molecular basis of virulence,'' J. Virol. 72:7467–7474(1998).

Novel Antimalarial Compounds, Methods of Synthesis Thereof, Pharmaceutical Compositions Comprising Same, and Methods of Using Same for Treatment and Prevention of Malaria

Michael R. Boyd (NCI), Gerhard Bringmann (EM), Sven Harmsen (EM) Roland Gotz (EM), T. Ross Kelly (EM), Matthias Wenzel (EM), Guido Francois (EM), J. D. Phillipson (EM), Laurent A. Assi (EM), Christopher Schneider (EM) Serial No. 08/195,547, filed 02/14/1994, now U.S. Patent 5,639,761; Serial No. 08/843,582, filed 04/16/1997; Serial No. 08/279,261, filed 07/22/1994, now U.S. Patent 5,552,550; Serial No. 08/674,362, filed 07/01/1996, now U.S. Patent 5,763,613; Serial No. 09/001,801, filed 12/31/1997, now U.S. Patent 6,140,339; Serial No. 09/527,002, filed 03/16/2000; Serial No. 08/279,339, filed 07/22/1994, now U.S. Patent 5,571,919; Serial No. 08/363,684, filed 12/23/1994, now U.S. Patent 5,578,729; Serial No. 08/674,359, filed 07/01/1996, now U.S. Patent 5,789,594; Serial No. 08/721,084, filed 09/24/1996, now U.S. Patent 5,786,482

Licensing Contact: Peter Soukas; 301/496–7056 ext. 268; e-mail: soukasp@od.nih.gov.

According to data recently reported by the World Health Organization (WHO), the death rate from malaria exceeds one million individuals per year. The Public Health Service seeks exclusive or non-exclusive licensee(s) to develop and commercialize the technology claimed within the portfolio of U.S. patents issued and pending, and corresponding international patents issued and pending. These patents and pending applications claim an exceptionally broad universe of novel naphthylisoquinoline alkaloid compounds, and methods of total synthesis thereof. Representative examples of these compounds have been shown to have potent in vitro activity against malaria parasites, including parasites that are highly resistant to available antimalarial drugs. Representative examples have also been shown to have potent in vivo activity against malaria parasites in animal models. Pharmaceutical compositions comprising these compounds, as well as methods of using the compounds to treat or prevent a malarial infection of a host, are claimed. The relative structural simplicity of this class of compounds, and the ready synthetic access thereto, provide unprecedented opportunities for structure-activity relationship (SAR), lead-optimization and antimalarial drug development. The technology is further described in the following publications: J. Nat Prod. 1997 Jul.;60(7):677–83 and Bioorg. Med. Chem. Lett. 1998 Jul.;8(13): 1729–34.

Dated: February 2, 2001.

Jack Spiegel,

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

[FR Doc. 01–3605 Filed 2–12–01; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Government-Owned Inventions; Availability for Licensing

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The ImmunoChip

Matthias Lorenz (NCI)

DHHS Reference No. E–288–00/0 filed 29 Dec 2000

Licensing Contact: Richard Rodriguez; 301/496–7056 ext. 287; e-mail: rodrigur@od.nih.gov.

The inventors have established a method to select sequences from databases for the construction of custom microarrays. Using this method, an immunological relevant microarray (ImmunoChip) was constructed. The ImmunoChip is a cDNA microarray which contains more than 13,000 different murine immunological-relevant genetic probes. The ImmunoChip can be used to study gene expression of immune cells or immune infiltrating tissues and organs. Specifically, the chip could be used for immunologically related research and/or vaccine development for a variety of human diseases which would include, but not necessarily limited to, cancer, infectious diseases, autoimmune diseases and allergies.

Water Soluble Amino Acid Analogs of Aminoflavone Compounds

Kenneth M. Snader et al. (NCI)

DHHS Reference No. E–279–99/0 filed 06 Apr 2000

Licensing Contact: Girish Barua; 301/496–7735 ext. 263; e-mail: baruag@od.nih.gov.

Many potential drugs of cancer chemotherapy intended for parenteral administration have been abandoned because the active ingredient is either slightly soluble or water-insoluble. Various methods have been developed to improve water solubility of these drugs. However, these methods can be complex and have a negative impact resulting from the use of co-solvents and complexing agents. The present invention addresses these problems by providing a method of producing water-