

FCR 23

Office of the President
December 17, 2013

Members, Board of Trustees:

PATENT ASSIGNMENT REPORT

Recommendation: that the Board of Trustees accept the patent assignment report for the period July 1 through September 30, 2013.

Background: The March 1997 meeting of the Board of Trustees authorized the University of Kentucky Research Foundation to conduct all future copyright and patent filings and prosecutions. Quarterly reports on patent and copyright applications are to be submitted to the Finance Committee of the Board of Trustees.

Action taken: Approved Disapproved Other _____

PATENT ASSIGNMENT
QUARTERLY FOR THE PERIOD THROUGH September 30, 2013

Patents

The following assignment on behalf of the Board of Trustees of the University of Kentucky Research Foundation has been executed:

1. **U.S. Patent Application Serial Number: 13/957,480**
 Filed: August 2, 2013
 Title: Method of Manufacturing a Semiconductor Heteroepitaxy Structure
 Inventor: Zhi David Chen (electrical engineering)
 Technical Description: This invention relates generally to the field of semiconductor structures and devices and, more particularly, to a new method of manufacturing a semiconductor heteroepitaxy structure.
 Summary: Modern integrated circuits (ICs) have a profound impact on society because of the high growth in consumer electronics such as cell phones and laptops. The key device in ICs, which functions as switches in logic gates, is the silicon (Si)-based metal-oxide semiconductor field-effect transistor (MOSFET). The method of manufacturing a semiconductor heteroepitaxy structure comprises the steps of depositing a layer of semiconductor oxide on a base semiconductor layer, scavenging oxygen from the semiconductor oxide layer and recrystallizing the oxygen scavenged semiconductor oxide layer as a semiconductor heteroepitaxy layer. This invention discloses multiple embodiments of the layer of semiconductor oxide, the insulator layer, the gate metal, and the positive dielectric material used in making a semiconductor heteroepitaxy structure, as well as variations in the method of making this structure.

2. **U.S. Patent Application Serial Number: 13/958,087**
 Filed: August 2, 2013
 Title: Prostaglandin E Synthase Inhibitors and Methods for Utilizing the Same
 Inventors: Chang-Guo Zhan, Hoon Cho, Hsin-Hsiung (Dan) Tai (pharmaceutical sciences), Adel Hamza (molecular and cellular biochemistry), Xinyun Zhao, Shurong Hou, and Ying Wu (pharmaceutical sciences)
 Technical Description: This invention relates to prostaglandin E synthase (PGES) inhibitors and, in particular, microsomal PGES-1 (mPGES-1) inhibitors and to methods of utilizing mPGES-1 inhibitors to treat inflammatory disorders.
 Summary: It is known that mPGES-1 couples with COX-2 and plays a key role in a number of disease conditions, including inflammation, arthritis, fever, pain, cancer, stroke, and bone disorders. Human mPGES-1 has been recognized as a promising target of next-generation therapeutics for those diseases, but few inhibitors of mPGES-1 have been identified in screening efforts. This invention discloses multiple pharmaceutical structures that have utility as PGES inhibitors, in particular mPGES-1, and their respective formations, such as injections, implants, suppositories, creams or lotions. The invention also discloses kits that include one of the pharmaceutical compositions, along with a second compound that has PGES inhibition and/or anti-inflammatory activity, and methods of inhibiting mPGES.

3. **U.S. Patent Application Serial Number: 14/019,709**
Filed: September 6, 2013
Title: Method of Treating Neuropathic Pain
Inventors: Joseph Holtman (anesthesiology), Peter A. Crooks, Linda Dwoskin, Elzbieta Pogonowska Wala (pharmaceutical sciences), J. Michael McIntosh
Technical Description: This invention relates to *bis*-quaternary ammonium salts and their use as agents for pain modulation, treatment, reversal, and/or prevention of inflammatory pain, neuropathic pain or nociceptive pain.
Summary: Pain can be broadly divided into two categories: nociceptive and neuropathic pain. Nociceptive pain occurs as a result of peripheral nociceptors, free nerve endings, by noxious stimuli such as heat, pressure and inflammatory mediators. Neuropathic pain occurs as a result of damage to the peripheral or central nervous system. In many patients, pain is inadequately managed with currently available drugs, and there is a need for more effective, less toxic analgesic drugs. One of the promising new molecular targets that could form the basis for a new class of analgesics is the neuronal nicotinic acetylcholine receptor (nAChR). This invention discloses *bis*-quaternary ammonium salts that are thought to interact with the nAChR. This invention claims numerous chemical compounds which are useful in treating inflammatory pain, neurotrophic pain or nociceptive pain and lists exemplary compounds of the present invention.

Patent Activities
Fiscal Year to date as of September 30, 2013

Number of Patent Applications	3
Number of Patents Issued	3
Patent Gross Revenue	\$1,048,683.55