FCR 16

Office of the President
May 4, 2004

Members, Board of Trustees:

PATENT ASSIGNMENT REPORT

Recommendation: that the patent assignment report for the period February 1, 2004 through March 31, 2004 be accepted.

Background: FCR 5, dated March 4, 1997, authorized that all future copyright and patent filings and prosecutions be conducted by the University of Kentucky Research Foundation (UKRF), and that the Vice President for Research and Graduate Studies or his designee be authorized to execute any needed documents to obtain appropriate patent or copyright protection. Quarterly reports on patent and copyright applications are to be submitted to the Finance Committee of the Board.

Action Taken: ☑ Approved ❑ Disapproved ❑ Other _____

PATENT ASSIGNMENT
QUARTERLY FOR THE PERIOD FEBRUARY 1, 2004 THROUGH MARCH 31, 2004

Patents

The following assignments on behalf of the Board of Trustees to the University of Kentucky Research Foundation have been executed:

1. U.S. Patent Application Serial Number: 10/718,265, filed November 21, 2003, titled "RECOMBINANT WATERMELON (CITRULLUS LANUTUS) HYDROPEROXIDE LYASE AND USES THEREOF" Inventors: Dr. David F. Hildebrand and Dr. Hirotada Fukushige. The present invention provides recombinant watermelon (*Citrullus anatus*) hydroperoxide lyase protein, DNA sequences encoding the protein, vectors containing the DNA sequences and hosts containing the vectors, together with methods for recombinantly producing watermelon hydroperoxide lyase, DNA sequences, vectors and hosts.

2. U.S. Patent Application Serial Number: (to be assigned), filed December 17, 2003, titled "GENES AND AGENTS TO REGULATE FOLLICULAR DEVELOPMENT, OVULATION CYCLE AND STERIODOGENISIS" Inventors: Dr. Tai Ji and Dr. Inhae Ji. The present invention provides methods of regulating gene expression through exposure of the gene to follicle-stimulating hormone. Follicle-stimulating hormone is used to suppress the expression of T3-binding protein mRNA and thereby regulate ovulation, estrogen production and steroidogenesis.

3. U.S. Patent Application Serial Number: (to be assigned), filed December 9, 2003, titled "TRANS-EXCISION-SPLICING RIBOZYME AND METHODS OF USE" Inventors: Dr. Stephen M. Testa and Dr. Michael A. Bell. The present invention provides a group I intron-derived ribozyme that binds RNA *in trans,* excises an internal segment from within the RNA, and splices the remaining 5' and 3' ends of the RNA back together (the trans-excision-splicing reaction). The excised segment can be as long as 28 nucleotides, or more, and as short as one nucleotide. The ribozymes of the invention are easily modified to alter their sequence specificity. Such ribozymes represent a new and potentially powerful class of generally adaptable genetic therapeutics.

4. U.S. Patent Application Serial Number: (to be assigned), filed January 6, 2004, titled "MEMBRANE-PERMEABLE PEPTIDE CAPABLE OF CALPAIN INHIBITION" Inventor: Dr. Rodney Guttmann. The present invention provides 5-mer peptides that can inhibit calpain I and calpain I1. The peptide sequence is as follows: Leu or Ala) - (Xaa) -(Asp or Glu) - (Xaa) - (Leu or Met), where Xaa can be any amino acid.

5. U.S. Patent Application Serial Number: (to be assigned), filed February 9, 2004, titled 'CATALYTIC CLEAVAGE OF PHOSPHATE ESTER BONDS BY BORON CHELATES" Inventor: Dr. David A. Atwood. The present invention provides novel chemical compounds having the general formula $L\{YX_m)_n$, wherein X is selected from the Group 13 elements, Y is a halide, and L is a chelating ligand containing at least one binding atom contacting the Group 13 element, the atom being selected from the group consisting of C, N, O, and S, and m and n are integers having a value of at least 1. L may be a Schiff base type ligand, such as a salen ligand. The compositions of the present invention may be bidentate, quadridentate, or greater. The compositions may be used in dealkylation of phosphate esters or ethers. Advantageously, the methods of the present invention may be rendered catalytic.

6. U.S. Patent Application Number: (to be assigned), filed March 4, 2004, titled "SYSTEM AND DEVICE FOR CHARACTERIZING SHAPE MEMORY ALLOY WIRES" Inventors: Dr. R. Ryan Vallance, Dr. Bruce L. Walcott, Dr. James E. Lumpp, Dr. Sumanth Chikkamaranahalli, Dr. Osamah A. Rawashdeh and Dr. Eric Wolsing. The present invention provides instruments and methods for measuring a property of a shape memory alloy. The instrument includes a base plate, a noncontact movable mass, a force gauge, an actuator, a biasing spring, a heater for heating the shape memory alloy, and a non-contact displacement detector. The biasing spring and the shape memory alloy are disposed whereby a force is applied substantially through a center of stiffness of the movable mass. The displacement detector measures a displacement of the movable mass in a colinear direction with a direction of movement of the movable mass and with a direction of the force applied by the biasing spring and the shape memory alloy. The linear motion stage comprises a housing and at least one guide bar, and wherein a calculated axial expansion of the guide bar is substantially equal to a calculated axial expansion of the base plate.

7. U.S. Patent Application Number: (to be assigned), filed March 4, 2004, titled "*IN-VITRO* CULTIVATION OF *WOLBACHIA* BACTERIA BY SHELL VIAL TECHNIQUE" Inventors: Dr. Stephen L. Dobson and Dr. Eric J. Marsland. The present invention provides a method for in-vitro cultivating of Wolbachia bacteria from filarial parasites. The method includes the steps of infecting an insect cell line with Wolbachia bacteria from a filarial parasite and providing a cell growth medium for the insect cell line.

8. U.S. Patent Application Serial Number: (to be assigned), filed March 5, 2004, titled "BIOACTIVE PEPTIDE-BASED PROBES" Inventors: Dr. Clair L. Hicks and Dr. Peter Crooks. The present invention provides a method for preparing a site-specific peptide probe, wherein the peptide is specific to a receptor, includes modifying a marker to include a tether

molecule and covalently binding the tether molecule to the peptide. The present invention also provides a labeled probe, comprising a peptide specific for a receptor and a marker. The marker is modified to include a tether molecule capable of covalently binding to the peptide. The peptide is typically derived from a bacteriophage or is a synthetic analog or derivative of the peptide. The receptor will typically be found on a surface of a bacterial cell. The method and probe of the invention are suitable for a rapid assay for a bacteria in a complex mixture.

9 U.S. Patent Application Serial Number: (to be assigned), filed March 9, 2004, titled "METHOD FOR SCREENING FOR GENES AND SMALL MOLECULES THAT ACTIVATE MAMMALIAN RECEPTOR PROTEINS" Inventors: Dr. Deane L. Falcone and Dr. John M. Littleton. The present invention provides methods for screening mutations that affect the synthesis of plant small molecules or compounds capable of activating a mammalian nuclear receptor protein and systems for rapidly assigning functionality to genes that regulate plant secondary metabolism.

10. U.S. Patent Application Serial Number: (to be assigned), filed March 10, 2004, titled "DERIVATIVES OF MITHRAMYCIN AND METHOD OF MAKING AND USES THEREOF" Inventor: Dr. Jurgen Rohr. The present invention provides mithramycin derivatives from mutated *Streptomyces argillaceous* and their production. The invention also provides for using the derivatives for the treatment of various diseases. Finally, the invention provides a mutated *Streptomyces argillaceous* useful in the production of the mithramycin derivatives.

11. U.S. Patent Application Serial Number: (to be assigned), filed March 16, 2004, titled "COMPOSITIONS AND METHODS FOR REDUCING OXIDATION OF METAL ALLOYS DURING HEATING" Inventor: Dr. David A. Atwood. The present invention provides a method for reducing oxidation during heating of an electropositive element-containing metal alloy contacting the metal with a non-cationic additive in an amount sufficient to reduce formation of an electropositive compound-containing spinel prior to heating said metal alloy. The present invention also provides a method for reducing oxidation of an electropositive element-containing metal alloy during heating, comprising the steps of contacting the metal with an effective amount of a non-cationic additive prior to heating said metal, and reducing formation of an oxidation intermediate.