

FCR 22

Office of the President
June 21, 2019

Members, Board of Trustees:

PATENT ASSIGNMENT REPORT

Recommendation: that the Board of Trustees accept the patent assignment report for the period January 1, 2019 to March 31, 2019.

Background: At its March 1997 meeting, 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.

Action taken: Approved Disapproved Other _____

PATENT ASSIGNMENTS
FOR THE PERIOD JANUARY 1, 2019 TO MARCH 31, 2019

Patents

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

1. **U.S. Patent Application Serial Number:** 16/249,513
Filed: January 16, 2019
Title: METHODS OF MAKING HIGH PERFORMANCE ELECTRODES
Inventors: Jiazhi Hu, Yang-Tse Cheng (College of Engineering), and Xiaosong Huang (GM Global Technology Operations LLC)
Technical Description: The present invention provides a method of making an electrode for an electrochemical cell. The method includes cross-linking a first mixture including a polymeric binder and an electroactive material including silicone, lithium, graphite, and a combination thereof to form a cross-linked intermediate electrode including the electroactive material dispersed within the polymeric binder. The method further includes carbonizing the cross-linked intermediate electrode to form the electrode.
Summary: The invention provides a method for making an electrode for use in an electrochemical cell, like a lithium-ion battery.
Application: Production of electrodes for batteries.

2. **U.S. Patent Application Serial Number:** PCT/US19/14299
Filed: January 18, 2019
Title: SEMISYNTHETIC AURONES AND METHODS OF USE THEREOF
Inventors: Jessica Blackburn, Mykhaylo Frasomyuk, Chunming Liu, Yanqi Xie, and David Watt (College of Medicine)
Technical Description: The invention provides novel semisynthetic aurones having antineoplastic activity and the use of such aurones to inhibit cancer cell growth.
Summary: This invention provides novel semisynthetic aurones, pharmaceutical compositions, and methods of treating cancer.
Application: Treatment of cancer.

3. **U.S. Patent Application Serial Number:** 16/265,154
Filed: February 1, 2019
Title: RNA-BASED COMPOSITIONS AND ADJUVANTS FOR PROPHYLACTIC AND THERAPEUTIC TREATMENT
Inventors: Peixuan Guo, Hui Li, Emil Khisamutdinov, and Daniel Jasinski (formerly of the College of Pharmacy)
Technical Description: The invention provides an artificial RNA nanostructure comprising multiple external strands of RNA, each external strand comprising 40-50 nucleotides; the internal strands and external strands assembled to form a triangle nanostructure and a pRNA three-way junction motif at each vertex of the nanostructure. Such nanostructure can be provided in a composition together with an adjuvant for use in

inducing the production of high-affinity neutralizing antibodies or inhibitory antibodies, inducing an immune response in a subject.

Summary: This invention provides immunostimulatory RNA-containing compositions and RNA nanoparticle-containing compositions useful for prophylactic and therapeutic treatment.

Application: Vaccines

4. U.S. Patent Application Serial Number: 16/273,340

Filed: February 12, 2019

Title: STORAGE OF PLATELETS

Inventors: Zhenyu Li, Binggang Xiang, and Guoying Zhang (College of Medicine)

Technical Description: This invention provides a novel method for storing platelets in the cold. The method includes adding one or more Ca⁺⁺ chelators, such as EGTA, to a platelet composition to extend the shelf life of the platelets.

Summary: This invention provides platelet compositions for storage and methods for platelet storage in the cold and at room temperature.

Application: Cold storage of platelets

5. U.S. Patent Application Serial Number: 16/295,406

Filed: March 7, 2019

Title: METHODS TO IMPAIR HEMATOLOGIC CANCER PROGENITOR CELLS AND COMPOUNDS RELATED THERETO

Inventors: Craig Jordan (College of Medicine)

Technical Description: The invention provides a method of using compounds that bind to the human CD123 molecule in the diagnosis and treatment of hematologic cancers.

Summary: This invention provides methods of impairing progenitor hematologic cancer cells by selectively targeting cells expressing CD123.

Application: Diagnosis and treatment of leukemias and malignant lymphoproliferative disorders.

6. U.S. Patent Application Serial Number: 16/361,810

Filed: March 22, 2019

Title: COMPOSITIONS AND METHODS FOR TREATING RETINAL DEGRADATION

Inventors: Jayakrishna Ambati and Benjamin Fowler (formerly College of Medicine)

Technical Description: The invention provides compositions for treating retinal damage and/or degradation. More specifically, this disclosure relates to methods for treating degradation of the retinal pigment epithelium by administering compositions comprising a nucleoside and/or a nucleoside reverse transcriptase inhibitor (NRTI).

Summary: The invention provides compositions and methods for treating retinal damage and/or degradation.

Application: Treatment of retinal damage and/or degradation

7. U.S. Patent Application Serial Number: 16/361,832

Filed: March 22, 2019

Title: COMPOSITIONS AND METHODS FOR TREATING RETINAL DEGRADATION

Inventors: Jayakrishna Ambati, Benjamin Fowler, and Kameshwari Ambati (formerly College of Medicine)

Technical Description: This invention provides compounds, compositions and methods useful for treating retinal damage and/or retinal degradation/retinal degeneration, for inhibiting inflammasome activation by Alu RNA associated with a cell, for reducing ATP-induced permeability of a cell, and for reducing an amount of mitochondrial reactive oxygen species in a cell.

Summary: This invention provides compounds, compositions, and methods useful for treating retinal damage and/or degradation.

Application: Treatment of retinal damage and/or degradation

Patent Activities
Fiscal year to date as of December 31, 2018

	Q1	Q2	Q3	Q4	Total
Full Patent Applications	7	7	7		21
Provisional Patent Applications	10	16	10		36
Patents Issued	2	6	7		15
License Income	\$1,176,827.69	\$75,162.99	\$1,149,705.55		\$2,401,696.23

Patent Application Summary Table

Inventors	College(s)	Title	Brief description
Biomedical			
Jessica Blackburn, Mykhaylo Frasomyuk, Chunming Liu, Yanqi Xie and David Watt	Medicine	SEMISYNTHETIC AURONES AND METHODS OF USE THEREOF	Novel semisynthetic aurones having antineoplastic activity.
Peixuan Guo, Hui Li, Emil Khisamutdinov, and Daniel Jasinski	Pharmacy	RNA-BASED COMPOSITIONS AND ADJUVANTS FOR PROPHYLACTIC AND THERAPEUTIC TREATMENT	Immunostimulatory RNA-containing compositions and RNA nanoparticle-containing compositions useful for prophylactic and therapeutic treatment.
Zhenyu Li, Binggang Xiang, and Guoying Zhang	Medicine	STORAGE OF PLATELETS	Platelet compositions for improved storage of blood platelets.
Craig Jordan	Medicine	METHODS TO IMPAIR HEMATOLOGIC CANCER PROGENITOR CELLS AND COMPOUNDS RELATED THERETO	Methods of impairing progenitor hematologic cancer cells by selectively targeting cells expressing CD123.
Jayakrishna Ambati and Benjamin Fowler	Medicine	COMPOSITIONS AND METHODS FOR TREATING RETINAL DEGRADATION	Treatment of retinal degradation.
Jayakrishna Ambati, Benjamin Fowler, and Kameshwari Ambati	Medicine	COMPOSITIONS AND METHODS FOR TREATING RETINAL DEGRADATION	Treatment of retinal degradation.
Engineering			
Jiazhi Hu and Yang-Tse Cheng	Engineering	METHODS OF MAKING HIGH PERFORMANCE ELECTRODES	Production of battery electrodes