[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

ACTION: Notice

SUMMARY: The inventions listed below are owned by an agency of the U.S. Government and are available for licensing in the U.S.

FOR FURTHER INFORMATION CONTACT: Licensing information and copies of the patent applications listed below may be obtained by emailing the indicated licensing contact at the National Heart, Lung, and Blood, Office of Technology Transfer and Development Office of Technology Transfer, 31 Center Drive Room 4A29, MSC2479, Bethesda, MD 20892-2479; telephone: 301-402-5579. A signed Confidential Disclosure Agreement may be required to receive copies of the patent applications.

SUPPLEMENTARY INFORMATION: This notice is in accordance with 35 U.S.C. 209 and 37 CFR Part 404 to achieve 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. A description of the technology follows.

Small Interfering RNA Inhibition of Cannabanoid-1 Receptor (CB1R) for Treating Type 2 Diabetes

Description of Technology: The invention pertains to the use of glucan encapsulated non-immunostimulatory small interfering RNAs (siRNAs) to treat type-2

diabetes. Endocannabinoids (EC) are lipid signaling molecules that act on the same cannabinoid receptors that recognize and mediate the effects of endo- and phytocannabanoids. EC receptor CB1R activation is implicated in the development of obesity and its metabolic consequences, including insulin resistance and type 2 diabetes. Beta-cell loss has been demonstrated in a Zucker diabetic fatty (ZDF) rat model of type-2 diabetes through CB1R-mediated activation of a macrophage-mediated inflammatory response. Conversely, rats treated with a peripheral CB1R antagonist restores normoglycemia and preserves beta-cell function. Similar results are seen following selective in vivo knockdown of macrophage CB1R by daily treatment of ZDF rats with the instant D-glucan-encapsulated CB1R Small interfering RNA (siRNA). Knock-down of CB1R with using glucan encapsulated siRNA may represent a new commecializable method of treating type-2 diabetes or preventing the progression of insulin resistance to overt diabetes.

Potential Commercial Applications:

Treatment of obesity, insulin resistance, and diabetes.

Development Stage:

In vivo data available

Inventors: George Kunos, Tony Jourdan (NIAAA), Michael Czech, Myriam Aouadi.

Intellectual Property: HHS Reference No. E-103-2013/0, U.S. Provisional Patent Application 61/839,239 filed June 25, 2013, International Patent Application PCT/US2014/043924 filed June 24, 2014, European Patent Application 14818342.9 filed June 24, 2014 and U.S. Patent Application 14/900,951 filed June 24, 2014.

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