[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, HHS.

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. in accordance with 35 U.S.C. 209 and 37 CFR Part 404 to achieve expeditious commercialization 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.

FOR FURTHER INFORMATION CONTACT: Licensing information and copies of the U.S. patent applications listed below may be obtained by writing to the indicated licensing contact at the National Heart, Lung and Blood Institute, Office of Technology Transfer and Development, National Institutes of Health, 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: Technology descriptions follow.

Methods for Artificial Oocyte Activation

Description of Technology:

Available for licensing and commercial development for both human and veterinary uses is a method of activating mammalian oocytes. These methods include contacting a mammalian oocyte of interest arrested at metaphase II with an effective amount of a Regulator of G-Protein Signaling (RGS)2 inhibitor; and contacting the mammalian oocyte of interest with an effective amount of a G protein coupled receptor activator. In general, RGS proteins stimulate the hydrolysis of GTP bound to activated Gα subunits, leading to signal termination. RGS2, which inhibits both G-αq and G-αs signaling suppresses Ca2+ release in mature mammalian eggs. Regulators of G-Protein Signaling (RGS)2 inhibitor and a G protein coupled receptor activator can be used to artificially activate a mammalian oocyte such that it re-enters the cell cycle. Examples of RGS2 inhibitors can be nucleic acids like siRNAs or dsRNAs. G-protein coupled receptor activators can be acetylcholine, a neurotransmitter such as serotonin, hormones, natural or synthetic G protein coupled receptor ligands or modulator, and acidic pH. The oocyte can be fertilized in vitro to form an embryo, which can be implanted in a subject and developed to term or can be used for the preparation of stem cells.

Potential Commercial Applications:

• in vitro fertilization

Development Stage:

• Early Stage

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Intellectual Property: HHS Reference No. E-253-2016/0

• US Provisional Patent Application No. 62/405,803 filed 7 October 2016.

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Dated: October 24, 2016

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National Heart, Lung and Blood Institute

Office of Technology Transfer and Development

National Institutes of Health

[FR Doc. 2016-26390 Filed: 11/1/2016 8:45 am; Publication Date: 11/2/2016]