[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 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.

FOR FURTHER INFORMATION: Licensing information and copies of the U.S. patent applications listed below may be obtained by writing to the indicated licensing contact at the Office of Technology Transfer, National Institutes of Health, 6011 Executive Boulevard, Suite 325, Rockville, Maryland 20852-3804; telephone: 301-496-7057; fax: 301-402-0220. A signed Confidential Disclosure Agreement will be required to receive copies of patent applications.

Islet Beta Cell Only M3 Muscarinic Acetylcholine Receptor Knockout Mouse

Description of Technology: Researchers at NIH have developed islet beta cell M3 muscarinic acetylcholine receptor knockout mouse. The mice were generated by crossing floxed mouse M3 muscarinic acetylcholine receptor mice with mice in which Cre recombinase was controlled by the beta-cell specific rat insulin promoter (RIP-Cre mice).

Potential Commercial Applications: Study of the physiological role of beta-cell M3 muscarinic receptors in the regulation of glucose homeostasis and insulin release in vivo.

Competitive Advantages: Allows for study of the role of the M3 receptors in the pancreas without whole body effects confounding the results.

Development Stage: In vivo data available (animal)

Inventor: Jürgen Wess, Ph.D. (NIDDK)

Publication: Gautam D, et al. A critical role for beta cell M3 muscarinic acetylcholine receptors in regulating insulin release and blood glucose homeostasis in vivo. Cell Metab. 2006 Jun;3(6):449-61. [PMID 16753580]

Intellectual Property: HHS Reference No. E-452-2013/0 – Research Tool. Patent protection is not being pursued for this technology.

Licensing Contact: Jaime M. Greene, M.S.; 301-435-5559; greenejaime@mail.nih.gov

Transgenic Mice with Constitutively Active M3 Muscarinic Receptor in Islet Beta Cells

Description of Technology: Q490L point mutation was introduced into the rat M3 muscarinic receptor cDNA to confer persistent, constitutive (ligand-independent) activity. Expression of the M3 receptor mutant was placed under the control of a 650 bp fragment of the rat insulin promoter II (RIP II) to limit expression to the islet beta cell.

Potential Commercial Applications: Diabetes research, especially type II Diabetes.

Competitive Advantages: Beneficial metabolic effects of this mouse model include high basal insulin secretion, improved glucose tolerance, increased serum insulin, and resistance to high-fat diet-induced glucose intolerance and hyperglycemia.

Development Stage: In vivo data available (animal)

Inventor: Jürgen Wess, Ph.D. (NIDDK)

Publication: Gautam D, et al. Beneficial metabolic effects caused by persistent activation of beta-cell M3 muscarinic acetylcholine receptors in transgenic mice. Endocrinology. 2010 Nov;151(11):5185-94. [PMID 20843999]

Intellectual Property: HHS Reference No. E-453-2013/0 – Research Tool. Patent protection is not being pursued for this technology.

Licensing Contact: Jaime M. Greene, M.S.; 301-435-5559; greenejaime@mail.nih.gov

Transgenic Mice Overexpressing Islet Beta Cell M3 Muscarinic Acetylcholine Receptors

Description of Technology: Researchers at NIH have generated transgenic mice in which the M3 muscarinic receptor is overexpressed in pancreatic beta cells. This was done by placing the receptor gene under the control of the 650 bp rat insulin promoter II (RIP II). The resulting mice show a pronounced increase in glucose tolerance and enhanced plasma insulin levels. Strikingly, these mutant mice were resistant to diet-induced glucose intolerance and hyperglycemia.

Potential Commercial Applications: Diabetes research, especially type II Diabetes.

Competitive Advantages: These transgenic mice overexpress the M3 muscarinic acetylcholine receptor only in pancreatic beta cells but notably are resistant to diet-induced glucose intolerance and hyperglycemia.

Development Stage: In vivo data available (animal)

Inventor: Jürgen Wess, Ph.D. (NIDDK)

Publication: Gautam D, et al. A critical role for beta cell M3 muscarinic acetylcholine receptors in regulating insulin release and blood glucose homeostasis in vivo. Cell Metab. 2006 Jun;3(6):449-61. [PMID 16753580]

Intellectual Property: HHS Reference No. E-455-2013/0 – Research Tool. Patent protection is not being pursued for this technology.

Licensing Contact: Jaime M. Greene, M.S.; 301-435-5559; greenejaime@mail.nih.gov

An Improved System for Production of Recombinant Baculovirus

Description of Technology: Baculoviruses have been used for decades to produce proteins in insect cell hosts. Current systems for generating recombinant baculovirus have several shortcomings which prevent their easy use in high-throughput applications. The present invention discloses an improved system to quickly and efficiently generate recombinant baculoviruses which produce recombinant proteins. In the new system, the baculovirus transfer vector, transposition helper plasmid and E. coli strain carrying the bacmid DNA were modified to eliminate the need for screening positive clones and improve the efficiency of baculovirus production. Taken together, these improvements permit facile high-throughput recombinant baculovirus production at reduced cost and improved speed over the currently available systems.

Potential Commercial Applications:

• High-throughput protein production

• Generation of virus-like particles in insect cells

Competitive Advantages:

• Elimination of background plasmid DNA during recombinant baculovirus production

• Elimination of nonproductive transposition events leading to false positives

• Lower cost production of baculovirus

• Increased speed of baculovirus production (allowing high-throughput production with limited screening)

• Higher efficiency cloning of baculovirus constructs

Development Stage:

• Prototype

• Pilot

• In vitro data available

Inventor: Dominic Esposito (NCI)

Intellectual Property: HHS Reference No. E-287-2012/0 – Research Tool. Patent protection is not being pursued for this technology.

Related Technology: HHS Reference No. E-164-2011 – Combinatorial Cloning Platform

Licensing Contact: Susan Ano, Ph.D.; 301-435-5515; anos@mail.nih.gov

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