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Diabetes Imaging Agent

Tech ID: 19364 / UC Case 2007-169-0

BRIEF DESCRIPTION

The present invention is related generally to a method for screening subjects to determine those subjects more likely to develop diabetes by quantization of insulin producing cells. The present invention is also related to the diagnosis of diabetes to monitor disease progression or treatment efficacy of candidate drugs.

FULL DESCRIPTION

D2 receptors (D2R) for dopamine were recently reported on rodent and human islets. University of California researchers propose to use a commercially available ligand with sub-nanomolar affinity and a high degree of specificity for D2R/D3R radiolabeled with fluorine-18 (half-life = 110 minutes) as a positron emission tomography (PET)-scanning agent to quantify changes in β -cell mass associated with diabetes mellitus.

The fluorine-18 (^{18}F) radioligand for dopamine D2 receptors (D2R) will be injected into diabetic patients. The radioligand will bind to the D2Rs in islets allowing the radioactive uptake by PET-CT scanning. Loss of beta cells will result in loss of radioligand binding to the pancreas. Since uptake of the radioligand in the liver is low, it may be feasible to detect small changes in the pancreas due to reduced background interference. The use of fluorine-18 as a radiolabel allows the use of the radioligand at facilities that do not have a cyclotron. Furthermore, the ligand is approved for human use making it eminently suitable as a diagnostic tool for T1DM.

SUGGESTED USES

Method for screening subjects to determine those subjects more likely to develop diabetes by quantization of insulin producing cells. Diagnosis of diabetes to monitor disease progression or treatment efficacy of candidate drugs.

ADVANTAGES

Improve early diagnosis, help monitor disease progression, provide tools to measure responsiveness to therapy and evaluate the efficiency of islet transplantation and graft survival.

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	9,662,059	05/30/2017	2007-169

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OTHER INFORMATION

KEYWORDS

diabetes, insulin, T1DM, blood glucose, β -cell, islet transplantation, graft survival, D2 receptors, positron emission tomography, fluorine-18

CATEGORIZED AS

» **Biotechnology**

» Health

» Other

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» Medical

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» Devices

» Diagnostics

» Imaging

» Screening

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