

CLAIMS

1. A method of ~~determining if a subject is to be provided an anti-Alzheimer's disease active agent-increased risk for development of Alzheimer's disease in a subject~~, comprising:

(a) detecting from a biological sample containing DNA taken from said subject the presence or absence of a genetic variant of the TOMM40 gene associated with increased or decreased risk of Alzheimer's disease, wherein said variant is a deletion/insertion polymorphism in intron 6 or intron 9 of the TOMM40 gene; and

(b) determining said subject is at increased or decreased risk of Alzheimer's disease when said genetic variant is present or absent; and

(c) providing an anti-Alzheimer's disease active agent which is to be administered to said subject in a treatment effective amount when said subject is determined to be at increased risk of Alzheimer's disease.

2. The method of claim 1, wherein the anti-Alzheimer's disease active agent is to be administered in said subject at an earlier age when said subject is determined to be at increased risk by the presence or absence of said genetic variant as compared to a subject in which said genetic variant is not present or absent.

3. The method of claim 1 or claim 2, wherein said active agent is selected from the group consisting of acetylcholinesterase inhibitors, NMDA receptor antagonists, peroxisome proliferator-activated receptor agonists or modulators, antibodies, fusion proteins, therapeutic RNA molecules, and combinations thereof.

4. The method of any of claims 1-3, 26-27, 30 wherein said genetic variant of the TOMM40 is a poly-T insertion variant at genomic location 50,094,889 of NCBI Build 36.3 (rs10524523).

5. Use of an anti-Alzheimer's disease active agent in the manufacture of a medicament for treating Alzheimer's disease in a subject, wherein said medicament is to be administered to said subject at an earlier age when said subject carries a genetic variant of the TOMM40 gene associated with increased risk of Alzheimer's disease as compared to a corresponding subject who does not carry said genetic variant,

wherein said genetic variant of the TOMM40 is a deletion/insertion polymorphism (DIP) in intron 6 or intron 9 of the TOMM40 gene.

21. Use of an anti-Alzheimer's disease active agent in the manufacture of a medicament for treating Alzheimer's disease in a subject wherein said medicament is to be administered to said subject at an earlier age when said subject carries a genetic variant of the TOMM40 gene associated with increased risk of Alzheimer's disease as compared to a corresponding subject who does not carry said genetic variant,

wherein said genetic variant of the TOMM40 is at a genetic location of NCBI Build 36.3 selected from the group consisting of: 50,092,565, 50,092,587, 50,093,609, 50,094,317, 50,094,558, 50,094,716, 50,094,733, 50,094,889, 50,095,506, 50,095,764, 50,096,531, 50,096,647, 50,096,697, 50,096,812, 50,096,902, 50,097,361, 50,098,378, and 50,098,513.

22. The use of claim 21, further comprising detecting whether said subject is an Apo E2/E2, E2/E3, E2/E4, E3/E3, E3/E4, or E4/E4 subject.

23. The use of claim 21, further comprising detecting whether said subject is an Apo E3/E3 or E3/E4 subject.

24. The use of any of or claims 21-23, wherein said active agent is selected from the group consisting of acetylcholinesterase inhibitors, NMDA receptor antagonists, peroxisome proliferator-activated receptor agonists or modulators, antibodies, fusion proteins, therapeutic RNA molecules, and combinations thereof.

25. The method of claim 4, wherein the genetic variant of the TOMM40 gene is the deletion/insertion polymorphism rs10524523 having a poly-T of between 20 and 50 contiguous base pairs.

26. The method of claim 1 or claim 2, wherein said active agent is a thiazolidinedione.

27. The method of claim 1 or claim 2, wherein said active agent is a thiazolidinedione drug.

28. The use of any of claims 5-7, wherein said active agent is a thiazolidinedione.