CLAIMS

What is claimed is:

1. A method for testing a therapeutic efficacy of a candidate substance for a prevention or treatment agent of a neurodegenerative disorder, the method comprising:
    a. optionally culturing immune or immune-like cells expressing full-length human CD33;
    b. treating said CD33 expressing immune or immune-like cells with said candidate substance at relevant concentration;
    c. treating said CD33 expressing immune or immune-like cells with amyloid-β (Aβ) at relevant concentration;
    d. measuring intracellular levels of Aβ in said CD33 expressing cells;

    such that higher levels of Aβ in CD33 cells treated with the candidate substance, relative to negative control, would indicate the therapeutic efficacy.

2. The method of claim 1 wherein the immune or immune-like cells are microglial cells.

3. A method for testing the therapeutic efficacy of a candidate substance for a prevention or treatment agent of a neurodegenerative disorder, the method comprising:
    a. optionally culturing immune or immune-like cells expressing full-length human CD33;
    b. treating said CD33 expressing immune or immune-like cells with said candidate substance at relevant concentration;
    c. treating said CD33 expressing immune or immune-like cells with lipopolysaccharide;
    d. measuring levels of pro-inflammatory cytokines in culture media of said CD33 expressing cells;

    such that lower levels of pro-inflammatory cytokines in the culture media of CD33 cells treated with the candidate substance, relative to negative control, would indicate the therapeutic efficacy.

4. The method of claim 3 wherein the immune or immune-like cells are microglial cells.

5. The method of any one of claims 1 to 4 wherein the neurodegenerative disorder is selected from, but not exclusive thereof, Alzheimer's disease, mild cognitive impairment, Parkinson's disease, dementia, schizophrenia, amyotrophic lateral sclerosis, Huntington's disease and multiple sclerosis.

6. A method for testing a binding interaction of a substance with human CD33, the method comprising:
    a. optionally culturing immune or immune-like cells that express full length human CD33;
    b. treating said CD33 expressing immune or immune-like cells with said substance at relevant concentration;
    c. measuring a read-out of the binding interaction using a standard assay;

    such that a higher read-out in CD33 cells treated with the substance, relative to negative control, would indicate the binding interaction.

7. The method of claim 6 wherein the immune or immune-like cells are microglial cells.

8. A pharmaceutical composition for modulating a function of microglial cells, which comprises 1-(3-(2-(1-benzothiophen-5-yl)ethoxy)propyl)azetidin-3-ol or a salt thereof.

9. Use of 1-(3-(2-(1-benzothiophen-5-yl)ethoxy)propyl)azetidin-3-ol or a salt thereof in the manufacture of a medicament for treating a neurodegenerative disorder.

10. The use according to claim 9, wherein the neurodegenerative disorder is Alzheimer's disease, mild cognitive impairment, Parkinson's disease, dementia, schizophrenia, amyotrophic lateral sclerosis, Huntington's disease or multiple sclerosis.

11. The pharmaceutical composition according to claim 8, wherein the modulating a function of microglial cells is enhancing phagocytosis or inhibiting cytokine production of microglial cells.

12. Use of a substance identified by the method of any one of claims 1 to 6 in the manufacture of a medicament for treating a neurodegenerative disorder.

13. The use according to claim 12, wherein the substance is 1-(3-(2-(1-benzothiophen-5-yl)ethoxy)propyl)azetid in-3-ol or a salt thereof.

14. The use according to claim 12 or 13, wherein the neurodegenerative disorder is Alzheimer's disease, mild cognitive impairment, Parkinson's disease, dementia, schizophrenia, amyotrophic lateral sclerosis Huntington's disease or multiple sclerosis.

15. Use of a composition that is identified as a possible drug in the disclosed assay in the manufacture of a medicament for treating or preventing a neurodegenerative disease, wherein the use comprises that a therapeutic dose or dosages of the composition is to be administered to a patient.

16. The use of claim 15 wherein the neurodegenerative disease is Alzheimer's disease.