CLAIMS

1. A method of detecting a population of macrophage in a sample comprising

detecting and/or determining the expression of Cdh5 and CD36 in the macrophage in the sample.

2. The method of claim 1, wherein the method further comprises detecting and determining the expression of one or more markers comprising CD107a, CD107b, IGFBP7 (Insulin-like growth factor-binding protein 7), LYVE1, CD206 and/or ESAM in a macrophage in the sample.

3. The method of any one of the preceding claims, wherein method further comprises detecting and determining a cell to be a macrophage in the sample by detecting the expression of a macrophage marker.

4. The method of any one of the preceding claims, wherein the macrophage is a Kupffer cell (KC), optionally an embryonically derived Kupffer cell.

5. The method of any one of the preceding claims, wherein the method further comprises detecting and determining a cell to be a macrophage in the sample by detecting the expression of *Clec4f, Lyz2, Vsig4, Csf1r, Adgre1*, F4/80, Tim4, Clec4F, and Vsig4.

6. The method of any one of the preceding claims, wherein the method comprises detecting and determining a population expressing CD206lo and/or ESAM- to be a first population of a Kupffer cell and a population expressing CD206hi and/or ESAM+ to be a second population of a Kupffer cell.

7. The method of any one of the preceding claims, wherein the method comprises detecting and determining a population expressing CD206lo and ESAM- to be a first population of a Kupffer cell and a population expressing CD206hi and ESAM+ to be a second population of a Kupffer cell.

8. The method of any one of the preceding claims, wherein an over-expression of one or more markers comprising CD107a, CD107b, IGFBP7 (Insulin-like growth factor-binding protein 7), LYVE1, CD36, CD206 and/or ESAM determines a population to be a second population of a Kupffer cell.

9. The method of any one of the preceding claims, wherein the method further comprises detecting, sorting, and/or determining the presence of one or more marker comprising CD206, ESAM, and combinations thereof.

10. The method of any one of claims 6 to 9, wherein the method further comprises separating the first and/or the second population of macrophage, optionally wherein the method further comprises separating the first and/or the second population of a Kupffer cell.

11. The method of any one of the preceding claims, wherein the method further comprises removing the population of cells expressing one or more of Cdh5+, CD107b+, CD206hi and/or ESAM+ from the sample.

12. The method of any one of the preceding claims, wherein the method further comprises determining the expression of one or more markers comprising CD45, CD64, F4/80, TIM4, Clec4F, Adgre1 (F4/80), Timd4, Csf1r, and Clec4f, optionally the method further comprises removing and/or excluding cells that express one or more *Adgre1*+, *Cx3cr1*+, *Timd4*-, *Clec4f*-, and combination thereof.

13. A kit for detecting and/or separating and/or depleting a population of a macrophage, comprising

an agent for detecting a population of a macrophage expressing Cdh5 and CD36,

optionally an agent capable of separating the population of the macrophage expressing Cdh5 and CD36, and

optionally an agent capable of depleting the population of the macrophage expressing Cdh5 and CD36.

14. The kit of claim 13, wherein the kit further comprises an agent for detecting a population of a macrophage expressing CD107b+, CD206hi and ESAM+,

optionally an agent capable of separating the population of the macrophage expressing CD107b+, CD206hi and ESAM+, and

optionally an agent capable of depleting the population of the macrophage expressing CD107b+, CD206hi and ESAM+.

15. A transgenic animal model comprising

a macrophage population expressing Cdh5 and CD36 that have been genetically engineered to undergo ablation upon exogenous activation.

16. A method of depleting a population of a macrophage, comprising

detecting and reducing a population of the macrophage in a sample from a subject, wherein the population of the macrophage expresses Cdh5 and CD36.

17. Use of an agent capable of reducing a population of macrophages expressing Cdh5 and CD36 in the manufacture of a medicament for treating obesity.

18. A method of determining the risk of obesity and/or a metabolic impairment related to obesity in a subject, comprising

detecting the expression level of Cdh5 and Cd36 expression in a macrophage in a sample from the subject.

19. The method of claim 18, further comprising detecting the expression level of Igfbp7 expression in a macrophage in a sample obtained from the subject.

20. Use of an agent capable of depleting a macrophage cell expressing Cdh5 and CD36 in the manufacture of a medicament for treating a subject identified to be of risk of obesity and/or the metabolic impairment related to obesity in the subject .

21. The use of claim 17 or 19, wherein the agent reduces a CD206hi and ESAM+ macrophage, optionally wherein the agent reduces a Cdh5+, CD206hi, and ESAM+ Kupffer cell.