

【CLAIMS】

~~【Claim 1】~~

~~———— A combination of biomarkers, comprising mannose binding protein C (MBL2), pancreatic triacylglycerol lipase (PNLIP), galectin 3 binding protein (LGALS3BP) and insulin-like growth factor binding protein 2 (IGFBP2).~~

~~【Claim 2】~~

~~———— The combination of biomarkers of claim 1, wherein the combination of biomarkers further comprises one or more biomarkers selected from the group consisting of ADAMTS like protein 2 (ADAMTSL2), ceruloplasmin (Cp), complement factor H (CFH), protein DDI1 homolog 2 (DDI2), ficolin 2 (FCN2), E-selectin (SELE), sialic acid binding Ig like lectin 14 (SIGLEC14), thrombospondin 1 (THBS1) and zymogen granule protein 16 homolog B (ZG16B).~~

15 **【Claim 31】**

Use of A composition, comprising an agent for measuring the mRNA or protein level of a combination of biomarkers, in the manufacture of a composition for use in a method of diagnosing diabetic retinopathy, the combination of biomarkers comprising mannose-binding protein C (MBL2), pancreatic triacylglycerol lipase (PNLIP), galectin-3-binding protein (LGALS3BP) and insulin-like growth factor binding protein 2 (IGFBP2).

【Claim 42】

The ~~composition~~use of claim 31, wherein the composition further comprises an agent for measuring the mRNA or protein level of one or more biomarkers selected from the group consisting of ADAMTS-like protein 2 (ADAMTSL2), ceruloplasmin (Cp), complement factor H (CFH), protein DDI1 homolog 2 (DDI2), ficolin 2 (FCN2), E-selectin (SELE), sialic acid-binding Ig-like lectin 14 (SIGLEC14), thrombospondin-1 (THBS1) and zymogen granule protein 16 homolog B (ZG16B).

【Claim 53】

The ~~composition~~use of claim 31, wherein the agent for measuring the mRNA level of the combination of biomarkers is a primer pair, probe or antisense nucleotide that specifically binds to a gene of each biomarker.

【Claim 64】

The ~~composition~~use of claim 31, wherein the agent for measuring the protein level of the combination of biomarkers is an antibody, interacting protein, ligand, nanoparticle or aptamer that specifically binds to a protein or peptide fragment of each biomarker.

【Claim 75】

A kit for use in a method of diagnosing diabetic retinopathy comprising an agent for measuring the mRNA or protein level of a combination of biomarkers, the combination of biomarkers comprising mannose-binding protein C (MBL2),

pancreatic triacylglycerol lipase (PNLIP), galectin-3-binding protein (LGALS3BP) and insulin-like growth factor binding protein 2 (IGFBP2) ~~the composition according to any one of claims 3 to 6.~~

5 **【Claim 86】**

The kit of claim 75, wherein the kit is a reverse transcription polymerase chain reaction (RT-PCR) kit, a DNA chip kit, an enzyme-linked immunosorbent assay (ELISA) kit, a protein chip kit, a rapid kit or a multiple reaction monitoring (MRM) kit.

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【Claim 7】

Use of an agent for measuring the mRNA or protein level of a combination of biomarkers, in the manufacture of a kit for use in a method of diagnosing diabetic retinopathy, the combination of biomarkers comprising mannose-binding protein C (MBL2), pancreatic triacylglycerol lipase (PNLIP), galectin-3-binding protein (LGALS3BP) and insulin-like growth factor binding protein 2 (IGFBP2).

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【Claim 8】

The use of claim 7, wherein the kit further comprises an agent for measuring the mRNA or protein level of one or more biomarkers selected from the group consisting of ADAMTS-like protein 2 (ADAMTSL2), ceruloplasmin 5 (Cp), complement factor H (CFH), protein DDI1 homolog 2 (DDI2), ficolin 2 (FCN2), E-selectin (SELE), sialic acid-binding Ig-like lectin 14 (SIGLEC14), thrombospondin1

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(THBS1) and zymogen granule protein 16 homolog B (ZG16B).

【Claim 9】

A method for providing information for diagnosing diabetic retinopathy,
5 comprising:

(a) measuring the mRNA or protein level of the combination of biomarkers of
claim 1 or 2 from a biological sample isolated from a patient; ~~and~~

(b) comparing the mRNA or protein expression level with an mRNA or protein
expression level from a sample of a control group; and -

10 (c) diagnosing diabetic retinopathy if the gene expression level or protein
expression level of the combination of biomarkers increases compared to the control
group.

【Claim 10】

15 The method of claim 9, wherein the method compares with the control group
by further including one or more types of clinical information selected from the group
consisting of the patient's age, body mass index (BMI), smoking status, Hb1Ac test
result, insulin treatment, hypertension, hyperlipidemia and cardiovascular disease.

20 **~~【Claim 11】~~**

~~The method of claim 9, wherein the method further comprises (c) diagnosing
diabetic retinopathy if the gene expression level or protein expression level of the
combination of biomarkers increases compared to the control group.~~

~~{Claim 12}~~

~~Use of a combination of biomarkers comprising mannose binding protein C (MBL2), pancreatic triacylglycerol lipase (PNLIP), galectin-3 binding protein (LGALS3BP) and insulin-like growth factor binding protein 2 (IGFBP2) in the~~
5 ~~manufacture of a reagent for diagnosing diabetic retinopathy.~~