

CLAIMS

1. A method of diagnosing a stroke in a subject, comprising:
 - i) determining a signature in a sample obtained from the subject by measuring the expression levels of at least two biomarkers selected from the group consisting of *PTGS2*, *HMOX1*, *LDLR*, *HSPA1B*, *G0S2*, *BAG3*, *TM4SF1*, *DUSP1* and *ADM*; preferably with the proviso that the at least two biomarkers do not consist in *DUSP1* and *ADM*;
 - ii) comparing the signature determined in step i) with a reference signature; and
 - iii) diagnosing the subject as being affected with a stroke when the expression levels of the at least two biomarkers in the signature are higher than the expression levels of the same at least two biomarkers in the reference signature.
2. The method according to claim 1, wherein step i) comprises measuring the expression levels of at least three biomarkers selected from the group consisting of *PTGS2*, *HMOX1*, *LDLR*, *HSPA1B*, *G0S2*, *BAG3*, *TM4SF1*, *DUSP1* and *ADM*.
3. The method according to claim 1 or 2, wherein step i) comprises measuring the expression levels of *PTGS2*, *HMOX1*, *LDLR*, *HSPA1B*, *G0S2*, *BAG3*, *TM4SF1*, *DUSP1* and *ADM*.
4. The method according to any one of claims 1 to 3, wherein the reference signature is obtained by measuring the expression levels of the biomarkers in a reference population of substantially healthy subjects.
5. The method according to any one of claims 1 to 4, for distinguishing a stroke from a stroke mimic.
6. A method of determining whether a subject suffering from a stroke will achieve a response with a therapy, comprising:

- 5 i) determining a signature in a sample obtained from the subject by measuring the expression levels of at least two biomarkers selected from the group consisting of *PTGS2*, *HMOX1*, *LDLR*, *HSPA1B*, *G0S2*, *BAG3*, *TM4SF1*, *DUSP1* and *ADM*;
preferably with the proviso that the at least two biomarkers do not consist in *DUSP1* and *ADM*;
- 10 ii) comparing the signature determined in step i) with a reference signature; and
iii) concluding that the subject achieves a response when the expression levels of the at least two biomarkers in the signature are lower than the expression levels of the same at least two biomarkers in the reference signature.
7. The method according to claim 6, wherein step i) comprises measuring the expression levels of *PTGS2*, *HMOX1*, *LDLR*, *HSPA1B*, *G0S2*, *BAG3*, *TM4SF1*, *DUSP1* and *ADM*.
- 15 8. The method according to claim 6 or 7, wherein the reference signature is obtained by measuring the expression levels of the biomarkers in a sample obtained from the same subject before the start of said therapy.
- 20 9. A method of determining whether a subject is at risk of having a stroke, comprising:
i) determining a signature in a sample obtained from the subject by measuring the expression levels of at least two biomarkers selected from the group consisting of *PTGS2*, *HMOX1*, *LDLR*, *HSPA1B*, *G0S2*, *BAG3*, *TM4SF1*, *DUSP1* and *ADM*;
preferably with the proviso that the at least two biomarkers do not consist in *DUSP1* and *ADM*;
- 25 ii) comparing the signature determined in step i) with a reference signature; and
iii) concluding that the subject is at risk of having stroke when the expression levels of the at least two biomarkers in the signature are higher than the expression levels of the same at least two biomarkers in the reference signature.

10. The method according to claim 9, wherein step i) comprises measuring the expression levels of nine biomarkers selected from *PTGS2*, *HMOX1*, *LDLR*, *HSPA1B*, *G0S2*, *BAG3*, *TM4SF1*, *DUSP1* and *ADM*.
- 5 11. The method according to claim 9 or 10, wherein the reference signature is obtained by measuring the expression levels of the biomarkers in a reference population of substantially healthy subjects.
12. The method according to any one of claims 9 to 11, wherein the subject has experienced a stroke and the method is for determining if the subject is at risk of having a recurrent stroke.
- 10 13. The method according to any one of the preceding claims, wherein stroke is ischemic stroke, transient ischemic attack or a haemorrhagic stroke.
14. The method according to any one of the preceding claims, wherein the sample is a blood sample, plasma sample or serum sample.
- 15 15. The method according to any one of the preceding claims, wherein the sample is not a brain sample.

CLAIMS

1. A method of diagnosing a stroke in a subject, comprising:
 - i) determining a signature in a sample obtained from the subject by measuring
5 the expression levels of at least three biomarkers selected from the group
consisting of PTGS2, HMOX1, LDLR, HSPA1B, G0S2, BAG3, TM4SF1,
DUSP1 and ADM, wherein the sample is not a brain sample;
 - ii) comparing the signature determined in step i) with a reference signature; and
 - 10 iii) diagnosing the subject as being affected with a stroke when the expression
levels of the at least three biomarkers in the signature are higher than the
expression levels of the same at least three biomarkers in the reference
signature.
2. The method according to claim 1, wherein step i) comprises measuring the
expression levels of PTGS2, HMOX1, LDLR, HSPA1B, G0S2, BAG3, TM4SF1,
15 DUSP1 and ADM.
3. The method according to any one of claims 1 to 2, wherein the reference signature
is obtained by measuring the expression levels of the biomarkers in a reference
population of substantially healthy subjects.
4. The method according to any one of claims 1 to 3, for distinguishing a stroke from
20 a stroke mimic.
5. A method of determining whether a subject suffering from a stroke will achieve a
response with a therapy, comprising:
 - i) determining a signature in a sample obtained from the subject by measuring
the expression levels of at least three biomarkers selected from the group
25 consisting of PTGS2, HMOX1, LDLR, HSPA1B, G0S2, BAG3, TM4SF1,
DUSP1 and ADM, wherein the sample is not a brain sample;
 - ii) comparing the signature determined in step i) with a reference signature; and

- iii) concluding that the subject achieves a response when the expression levels of the at least three biomarkers in the signature are lower than the expression levels of the same at least three biomarkers in the reference signature.
- 6. The method according to claim 5, wherein step i) comprises measuring the expression levels of *PTGS2*, *HMOX1*, *LDLR*, *HSPA1B*, *G0S2*, *BAG3*, *TM4SF1*, *DUSP1* and *ADM*.
- 7. The method according to claim 5 or 6, wherein the reference signature is obtained by measuring the expression levels of the biomarkers in a sample obtained from the same subject before the start of said therapy.
- 8. A method of determining whether a subject is at risk of having a stroke, comprising:
 - i) determining a signature in a sample obtained from the subject by measuring the expression levels of at least three biomarkers selected from the group consisting of *PTGS2*, *HMOX1*, *LDLR*, *HSPA1B*, *G0S2*, *BAG3*, *TM4SF1*, *DUSP1* and *ADM*, wherein the sample is not a brain sample;
 - ii) comparing the signature determined in step i) with a reference signature; and
 - iii) concluding that the subject is at risk of having stroke when the expression levels of the at least three biomarkers in the signature are higher than the expression levels of the same at least three biomarkers in the reference signature.
- 9. The method according to claim 8, wherein step i) comprises measuring the expression levels of *PTGS2*, *HMOX1*, *LDLR*, *HSPA1B*, *G0S2*, *BAG3*, *TM4SF1*, *DUSP1* and *ADM*.
- 10. The method according to claim 8 or 9, wherein the reference signature is obtained by measuring the expression levels of the biomarkers in a reference population of substantially healthy subjects.
- 11. The method according to any one of claims 8 to 10, wherein the subject has experienced a stroke and the method is for determining if the subject is at risk of having a recurrent stroke.

12. The method according to any one of the preceding claims, wherein stroke is ischemic stroke, transient ischemic attack or a haemorrhagic stroke.
13. The method according to any one of the preceding claims, wherein the sample is a blood sample, plasma sample or serum sample.