

WHAT IS CLAIMED IS:

1. A method of diagnosing and/or monitoring traumatic brain injury (TBI) in a subject, the method comprising determining a level of at least one RNA biomarker in a saliva sample obtained from the subject, wherein the at least one RNA biomarker comprises hsa-miR-1246.
2. The method of claim 1, wherein either an upregulated level or a downregulated level of the at least one RNA biomarker is indicative of TBI.
3. The method of claim 1, wherein the subject is diagnosed as having TBI if the level of the at least one RNA biomarker is either above or below a predetermined threshold or increased or decreased relative to a control.
4. The method of claim 1, wherein the saliva sample is obtained during a period of time after injury selected from immediately after the injury until the expression level of at least one of the RNA biomarkers returns to a predetermined threshold value or to the amount of the RNA biomarker in a control sample.
5. The method of claim 1, wherein the saliva sample is obtained up to 1 hour after injury.
6. The method of claim 1, further comprising obtaining one or more additional saliva samples from the subject at one or more additional times after the injury, and wherein one or more additional saliva sample is obtained during a period of time after injury selected from immediately after the injury until the expression level of at least one of the RNA biomarkers returns to the predetermined threshold value or to the amount of the RNA biomarker in the control sample.
7. The method of any one of claims 1-6, wherein the detecting an amount of the at least one RNA biomarker is performed using a PCR-based assay, a light array assay, a laminar flow chip assay, or any assay suitable for detecting that at least one RNA biomarker, wherein when using the PCR-based assay the predetermined threshold is equivalent to a fold change of 1.5 or more using the 2-delta delta CT ($2^{-\Delta\Delta CT}$)

method, and wherein the predetermined threshold is equivalent to a fold change of 2 or more using the 2-delta delta CT (2- $\Delta\Delta$ CT) method.

8. The method of any one of claims 1-7, wherein the at least one RNA biomarker further comprises one or more miRNA:
 - a. selected from the group consisting of hsa-let-7i-5p, hsa-miR-107, hsa-miR-126-5p, hsa-miR-135b-5p, hsa-miR-142-3p, hsa-miR-142-5p, hsa-miR-143-3p, hsa-miR-148a-3p, hsa-miR-206, hsa-miR-29c-3p, hsa-miR-34b-3p, hsa-miR-425-5p, hsa-miR-449a, hsa-miR-671-3p, hsa-miR-6748-3p, and hsa-miR-934, or any combination thereof; and/or
 - b. selected from the group consisting of hsa-let-7a-5p, hsa-let-7b-5p, hsa-let-7f-5p, hsa-miR-103a-3p, hsa-miR-21-5p, and hsa-miR-92a-3p, or any combination thereof, or
selected from hsa-miR-126-3p, hsa-miR-144-3p, hsa-miR-144-5p, hsa-miR-16-1-3p, hsa-miR-339-5p, hsa-miR-497-5p, put-miR-1204, put-miR-323, put-miR-325, put-miR-444, put-miR-465, put-miR-469, put-miR-594, put-miR-856, put-miR-893, put-miR-958, RNU4-6p, SNORA57, SNORD3B-2, tRNA120-AlaAGC, tRNA18-ArgCCT, tRNA27-MetCAT, tRNA2-LeuTAA, tRNA73-ArgCCG, tRNA8-ThrAGT, tRNA9-TyrGTA, U2.3, U4.64, U6.168, U6.601, UC022CJG1, YRNA-245, and YRNA-684.
9. A sensor element for diagnosing and/or monitoring traumatic brain injury (TBI) according to the method of any one of claims 1-8, the sensor element comprising a substrate functionalized with a probe specific for at least one RNA biomarker, and wherein the at least one RNA biomarker comprises hsa-miR-1246, preferably the probe comprises a nucleic acid able to bind to the at least one RNA biomarker, and the probe comprises a nucleic acid having at least 70% identity with a sequence which is the complement of SEQ ID NO:110.
10. A detection system for diagnosing and/or monitoring TBI according to the method of any one of claims 1-9, comprising:
the sensor element comprising a substrate functionalized with a probe specific for at least hsa-miR-1246, and

a detection device capable of detecting the binding of a target RNA biomarker to the probe, wherein the probe comprises a nucleic acid able to bind to the at least one RNA biomarker probe, and wherein the probe comprises a nucleic acid having at least 70% identity with a sequence which is the complement of SEQ ID NO: 110.

11. The detection system according to claim 10, further comprising means to determine whether the target RNA biomarker is upregulated or downregulated.
12. Use of an RNA biomarker for diagnosing and/or monitoring traumatic brain injury (TBI) according to any one of claims 1 to 8, wherein an upregulated level or a downregulated level of the at least one RNA biomarker comprising hsa-miR-1246 is detected in a saliva sample obtained from a human subject.
13. A method of detecting an RNA biomarker in a saliva sample according to any one of claims 1 to 8, the method comprising
 - obtaining a saliva sample from a human subject,
 - contacting the saliva sample with at least one oligonucleotide primer complementary to at least one RNA biomarker, and wherein the at least one RNA biomarker comprises hsa-miR-1246;
 - amplifying the at least one RNA biomarker using a polymerase chain reaction;
 - and
 - detecting the amplified RNA biomarker.
14. A kit for use in a method of diagnosing and/or monitoring traumatic brain injury (TBI) in saliva from a human subject according to any one of claims 1 to 8, wherein the kit comprising at least one probe specific for the at least one RNA biomarker comprising has-miR-1246, wherein the probe comprises a nucleic acid able to bind to the the at least one RNA biomarker, and the nucleic acid having at least 70% identity with a sequence which is the complement of SEQ ID NO: 110.
15. A composition for diagnosing and/or monitoring traumatic brain injury (TBI) in saliva from a human subject according to the method in any one of claims 1 to 8, the composition comprising at least one probe specific for at least one RNA biomarker comprising hsa-miR-1246, wherein the probe comprises a nucleic acid able to bind to

the at least one RNA biomarker, and the probe comprises a nucleic acid having at least 70 % identity with a sequence which is the complement of SEQ ID NO: 110.