CLAIMS

1. A method for detecting in a subject the presence of a biomarker contained in a microvesicle, thereby aiding in the diagnosis, monitoring and/or evaluation of a disease or other medical condition, comprising the steps of:

   (a) isolating microvesicles from a bodily fluid obtained from a human, wherein the bodily fluid is serum or plasma; the step of isolating comprising:

      processing a microvesicle fraction to exclude proteins, lipids, debris from dead cells, and other contaminants; purifying microvesicles from the microvesicle fraction using size exclusion chromatography, density gradient centrifugation, centrifugation, differential centrifugation, immunoabsorbent capture, affinity purification, microfluidic separation, ultracentrifugation or a nanomembrane ultrafiltration concentrator; washing the microvesicles;

   (b) extracting one or more nucleic acids from the microvesicles; and

   (c) analyzing the extracted one or more nucleic acids for the presence or absence of the biomarker;

   wherein the biomarker is Epidermal Growth Factor Receptor vIII (EGFRvIII), and wherein the disease or other medical condition is a brain tumor.

2. The method of claim 1, wherein the biomarker comprises RNA, including messenger RNA, or DNA, including single stranded DNA or complementary DNA.

3. The method of any previous claim, wherein the detecting step c) is performed by microarray analysis, PCR, hybridization with allele-specific probes, enzymatic mutation detection, ligation chain reaction (LCR), oligonucleotide ligation assay (OLA), flow-cytometric heteroduplex analysis, chemical cleavage of mismatches, mass spectrometry, nucleic acid sequencing, single strand conformation polymorphism (SSCP), denaturing gradient gel electrophoresis (DGGE), temperature gradient gel electrophoresis (TGGE), restriction fragment polymorphisms, serial analysis of gene expression (SAGE), or combinations thereof.

4. The method of any preceding claim, wherein processing the microvesicle fraction is by filtering through a 0.8 μm filter.

5. The method of claim 4, wherein filtering through a 0.8 μm filter is followed by ultracentrifugation.

6. The method of any preceding claim, wherein processing the microvesicle fraction is by centrifugation.

7. The method of any preceding claim, wherein the brain tumor is glioma or glioblastoma.

8. The method of any preceding claim, wherein the method further comprises step (d) choosing a treatment option for the subject when EGFRvIII is present in the bodily fluid.

9. The method of claim 8, wherein the treatment option is treatment with an EGFR inhibitor, preferably wherein the EGFR inhibitor is erlotinib or gefitinib.