

CLAIMS

1. A method of determining the likelihood of the presence of lung cancer in a subject, the method comprising determining the level of a biomarker selected from the group consisting of catalase (CAT), C-X-C motif chemokine receptor 4 (CXCR4), superoxide dismutase 3 (SOD3) and surfactant protein B (SFTPB) from a vesicle population isolated from a biological sample from said subject, wherein a change in the level of biomarker as compared to a reference indicates the likelihood of the presence of lung cancer in the subject.
2. The method of claim 1, wherein an increase in the level of biomarker as compared to a reference indicates the likelihood of the presence of lung cancer in the subject.
3. The method of claim 1 or claim 2, wherein the biomarker is a nucleic acid, protein or a peptide.
4. The method of any one of claims 1 to 3, wherein the vesicle is an exosome.
5. The method of any one of claims 1 to 4, wherein the level of the biomarker is determined using an antibody-based technique or PCR-based technique.
6. The method of any one of claims 1 to 5, wherein the method comprises isolating the vesicle population from said biological sample.
7. The method of any one of claims 1 to 6, wherein the method comprises detecting the vesicle population with an antibody.
8. The method of claim 7, wherein the antibody is selected from the group consisting of an anti-CD9 antibody, an anti-CD63 antibody and an anti-CD81 antibody.
9. The method of any one of claims 1 to 8, wherein the biological sample is a blood, serum or plasma sample.
10. The method of any one of claims 1 to 9, wherein the cancer is non-small cell lung

cancer (NSCLC) or small cell lung cancer (SCLC).

11. The method of claim 10, wherein the NSCLC or SCLC is early NSCLC or early SCLC.

12. The method of any one of claims 1 to 11, wherein the method comprises detecting the level of CAT, CXCR4 and SFTPb.

13. The method of any one of claims 1 to 12, wherein the method further comprises performing a chest computed tomography (CT) on the subject.

14. The method of any one of claims 1 to 13, wherein the method comprises administering an anti-cancer therapy to a subject found to have lung cancer.

15. A method of determining the progression of lung cancer in a subject, the method comprising determining the level of a biomarker selected from the group consisting of CAT, CXCR4, SOD3 and SFTPb from a vesicle population isolated from a biological sample from said subject, wherein a change in the level of biomarker as compared to a reference distinguishes between the presence of early stage and late stage lung cancer in a subject.

16. A method of detecting and treating lung cancer in a subject, the method comprising: (a) determining the level of a biomarker selected from the group consisting of CAT, CXCR4, SOD3 and SFTPb in a vesicle population isolated from a biological sample from said subject, wherein a change in the level of biomarker as compared to a reference indicates the presence of lung cancer in the subject, and (b) administering an anti-cancer therapy to the subject.

17. A method of monitoring the responsiveness of a subject suffering from lung cancer to an anti-cancer therapy, the method comprising determining the level of a biomarker selected from the group consisting of CAT, CXCR4, SOD3 and SFTPb in a vesicle population isolated from a biological sample from said subject, wherein (a) an increase or no change in the level of biomarker as compared to a reference indicates that the subject is non-responsive to the anti-cancer therapy, and wherein (b) a decrease in the level of biomarker as compared to a reference indicates that the subject is responsive to the anti-cancer therapy.