CLAIMS

1. A method of monitoring the progress of a disease in a subject suffering from an infection, comprising:

(i) contacting a body fluid sample obtained from the subject with a binding agent to detect or measure the level of cell free nucleosomes comprising histone isoform H3.1;

(ii) repeating step (i) on one or more occasions; and

(iii) using any changes in the level of cell free nucleosomes comprising histone isoform H3.1 to monitor the progression of the infection in the subject.

2. A method of assigning a risk of an adverse outcome to a subject suffering from an infection, comprising:

(i) contacting a body fluid sample obtained from the subject with a binding agent to detect or measure the level of cell free nucleosomes comprising histone isoform H3.1; and

(ii) using the level of cell free nucleosomes comprising histone isoform H3.1 detected to assign the likelihood of an adverse outcome to said subject,

wherein a subject identified with a high likelihood of an adverse outcome is assigned for medical intervention.

3. The method as defined in claim 1 or claim 2, wherein the infection is a viral, bacterial, fungal or microbial infection such as a respiratory tract infection selected from: influenza, pneumonia and severe acute respiratory syndrome (SARS).

4. The method as defined in claim 1 or claim 2, wherein the subject is suffering from sepsis or septic shock.

5. The method as defined in any one of claims 1 to 4, wherein the body fluid sample is a blood, serum or plasma sample.

6. The method as defined in any one of claims 1 to 5, wherein the cell free nucleosome comprising histone isoform H3.1 is a part of, or derived from, a neutrophil extracellular trap.

7. The method as defined in any one of claims 1 to 6, wherein the level of cell free nucleosomes comprising histone isoform H3.1 is detected or measured using an immunoassay, immunochemical, mass spectroscopy, chromatographic, chromatin immunoprecipitation or biosensor method.

8. The method as defined in any one of claims 1 to 7, wherein the method of detection or measurement comprises contacting the body fluid sample with a solid phase comprising a binding agent that detects cell free nucleosomes comprising histone isoform H3.1, and detecting binding to said binding agent.

9. The method as defined in any one of claims 1 to 8, wherein the method of detection or measurement comprises: (i) contacting the sample with a first binding agent which binds to an epigenetic feature of a cell free nucleosome, wherein the epigenetic feature is histone H3.1; (ii) contacting the sample bound by the first binding agent in step (i) with a second binding agent which binds to cell free nucleosomes; and (iii) detecting or quantifying the binding of the second binding agent in the sample.

10. The method as defined in claim 9, wherein the first binding agent is an anti-histone H3.1 antibody directed to bind to an epitope around amino acids 30-33 of the histone H3.1 protein.

11. The method as defined in claim 9 or claim 10, wherein the second binding agent is an anti-nucleosome antibody directed to bind to a conformational nucleosome epitope.

12. The method as defined in any one of claims 1 to 11, wherein the subject is a human or an animal subject.

13. The method as defined in any one of claims 1 to 12, additionally comprising comparing the level of cell free nucleosomes comprising histone isoform H3.1 in the body fluid sample of the subject with one or more controls optionally wherein the control is a healthy subject or a subject with the infection displaying no, or mild, symptoms.

14. The method as defined in any one of claims 1 to 13, wherein the level of cell free nucleosomes comprising histone isoform H3.1 is detected or measured as one of a panel of measurements.

15. A method of detecting a subject in need of medical treatment for pneumonia, acute respiratory syndrome (ARS), acute respiratory distress syndrome (ARDS) or severe acute respiratory syndrome (SARS), comprising:

(i) contacting a body fluid sample obtained from the subject with a binding agent to detect or measure the level of cell free nucleosomes comprising histone isoform H3.1; and

(ii) using the level of cell free nucleosomes comprising histone isoform H3.1 as an indicator that the subject is in need of medical treatment for pneumonia, ARS, ARDS or SARS.

16. A method of detecting a subject in need of medical treatment for sepsis or septic shock, comprising:

(i) contacting a body fluid sample obtained from the subject with a binding agent to detect or measure the level of cell free nucleosomes comprising histone isoform H3.1; and

(ii) using the level of cell free nucleosomes comprising histone isoform H3.1 as an indicator that the subject is in need of medical treatment for sepsis or septic shock.