CLAIMS

1. A method of predicting a subject's risk of acquiring a cardiac disorder other than myocardial infarction or unstable angina, or of diagnosing a cardiac disorder other than myocardial infarction or unstable angina in a subject, the method comprising:

(i) measuring a level of a Troponin T upstream open reading frame (TnTuORF) peptide in a biological sample from the subject by detecting binding between the TnTuORF peptide and a binding agent that selectively binds to the TnTuORF peptide to determine a circulating level of the TnTuORF peptide in the subject; and

(ii) comparing the level of the TnTuORF peptide measured in (i) against a reference circulating level of the TnTuORF peptide from a suitable control population,

wherein a higher value for the circulating level of the TnTuORF peptide in the subject compared to the reference level of the TnTuORF peptide in the control population is predictive of the subject acquiring a cardiac disorder other than myocardial infarction or unstable angina, or is indicative of a cardiac disorder other than myocardial infarction or unstable angina, and wherein the Troponin T upstream open reading frame (TnTuORF) peptide consists of the amino acid sequence set forth in any one of SEQ ID NO:1, SEQ ID NO: 2, SEQ ID NO: 3 or SEQ ID NO: 4,

wherein the cardiac disorder is selected from atrial fibrillation, heart failure, pericarditis, vasovagalsyncope or any combination thereof.

2. The method of claim 1, wherein step (i) comprises measuring the level of the TnTuORF peptide in a first biological sample taken from the subject at a first point in time to determine a first circulating level of the TnTuORF peptide and measuring the level of the TnTuORF peptide in a second biological sample taken from the subject at a later period in time to determine a second circulating level of the TnTuORF peptide; and comparing the first and second circulating levels of the TnTuORF peptide, wherein an increase in the second

circulating level of the TnTuORF peptide relative to the first circulating level is indicative of increased risk of acquiring a cardiac disorder other than myocardial infarction or unstable angina, or is indicative of a cardiac disorder other than myocardial infarction or unstable angina and/or of persistence of a cardiac disorder other than myocardial infarction or unstable angina.

3. The method of claim 1 which further comprises identifying in the subject absence or presence of one or more risk factors that are predictive of the subject acquiring a cardiac disorder other than myocardial infarction or unstable angina, or that are indicative of a cardiac disorder other than myocardial infarction or unstable angina in the subject, said risk factors being selected from heart rate, haemoglobin concentration, blood pressure, age, sex, weight, level of physical activity, family history of obesity, family history of diabetes, family history of cardiac events, and levels of circulating Troponin T and Troponin I.

4. A method for monitoring responsiveness of a subject to treatment with a drug or therapy for a cardiac disorder other than myocardial infarction or unstable angina, the method comprising:

(i) measuring a first level of a Troponin T upstream open reading frame (TnTuORF) peptide in a first biological sample from the subject by detecting binding between the TnTuORF peptide and a binding agent that selectively binds to the TnTuORF peptide;

(ii) measuring a second level of the TnTuORF peptide in a second biological sample obtained from the subject at a later point in time than the first biological sample and after the subject has received treatment with the drug or therapy, by detecting binding between the TnTuORF peptide and the binding agent that selectively binds to the TnTuORF peptide; and

(iii) comparing the measured first and second levels of the TnTuORF peptide in, respectively, the first and second samples,

wherein an increase in the second level of the TnTuORF peptide relative to the first level of the TnTuORF peptide is indicative of a poor response by the subject to the treatment with the drug or therapy, and wherein a decrease in the second level of the TnTuORF peptide relative to the first level of the TnTuORF peptide is indicative of a positive response by the subject to the treatment with the drug or therapy, wherein the TnTuORF peptide consists of the amino acid sequence set forth in any one of SEQ ID NO:1, SEQ ID NO: 2, SEQ ID NO: 3 or SEQ ID NO: 4.

5. The method of claim 1, wherein:

(a) the control population comprises one or more control subjects that are sex and age-matched to the subject and for which the cardiac disorder is known; or

(b) the reference level of the TnTuORF peptide is a mean circulating TnTuORF peptide concentration from the control population; or

(c) the biological sample is a body fluid or a heart tissue sample; or

(d) the body fluid is selected from venous blood, arterial blood, plasma, serum and interstitial fluid.

6. The method of claim 1 wherein the binding agent that selectively binds to the TnTuORF peptide is selected from: (i) an antibody or antigen binding fragment thereof; (ii) a polyclonal, monoclonal, chimeric or humanized antibody or antigen binding fragment thereof; (iii) a monoclonal antibody or antigen binding fragment thereof; and (iv) a binding agent or antibody that is immobilized to a solid phase.

7. An assay method for determining a level of a Troponin T upstream open reading frame (TnTuORF) peptide in a biological sample from a subject having, or at risk of acquiring, a cardiac disorder other than myocardial infarction or unstable angina, the assay method comprising detecting and quantitatively measuring binding between the TnTuORF peptide and a binding agent that selectively binds to the TnTuORF peptide to

determine the level of the TnTuORF peptide in the biological sample from the subject, wherein the TnTuORF peptide consists of the amino acid sequence set forth in any one of SEQ ID NO:1, SEQ ID NO: 2, SEQ ID NO: 3 or SEQ ID NO: 4.

8. The assay method of claim 7, wherein one or more of:

(a) the assay method comprises:

(i) measuring a level of the Troponin T upstream open reading frame (TnTuORF) peptide in the biological sample from the subject to obtain a measured level of the TnTuORF peptide; and

(ii) comparing the measured level of the TnTuORF peptide from (i) to a reference level of the TnTuORF peptide in a biological sample from a suitable control population,

wherein an increased level of the TnTuORF peptide measured in (i) relative to the reference level of the TnTuORF peptide in the biological sample from the control population in (ii) is predictive of the subject acquiring a cardiac disorder other than myocardial infarction or unstable angina, or is diagnostic of the subject having a cardiac disorder other than myocardial infarction or unstable angina, and further wherein the measuring step comprises detecting binding between the TnTuORF peptide and a binding agent that selectively binds to the TnTuORF peptide; or

(b) the assay method comprises a method that is selected from an immunoassay, an enzyme immunoassay, a radioimmunoassay or a chemiluminescence assay; or

(c) the binding agent that selectively binds to the TnTuORF peptide is an antibody or antigen binding fragment thereof.

9. A kit for measuring a level of a Troponin T upstream open reading frame (TnTuORF) peptide in a biological sample from a subject having, or at risk of acquiring, a cardiac disorder other than myocardial infarction or unstable angina, comprising a binding agent that selectively binds to the TnTuORF peptide and which can be quantitatively measured

upon binding to the TnTuORF peptide, wherein the TnTuORF peptide consists of the amino acid sequence set forth in any one of SEQ ID NO:1, SEQ ID NO: 2, SEQ ID NO: 3 or SEQ ID NO: 4.

10. The kit of claim 9 in which one or more of:

(a) the binding agent that selectively binds to the TnTuORF peptide is an antibody or antigen binding fragment thereof, and

(b) the kit further comprises instructions for measuring the level of the TnTuORF peptide in the sample.

11. A Troponin T upstream open reading frame (TnTuORF) peptide binding agent that selectively binds a TnTuORF peptide,

wherein the Troponin T upstream open reading frame (TnTuORF) peptide consists of the amino acid sequence set forth in any one of SEQ ID NO:1, SEQ ID NO: 2, SEQ ID NO: 3 or SEQ ID NO: 4.

12. The Troponin T upstream open reading frame (TnTuORF) peptide binding agent of claim 11 which is an antibody that selectively binds the TnTuORF peptide, or an antigen-binding fragment of said antibody.