

comparing the measured levels of the analytes in the blood sample, the serum sample or the plasma sample with one or more reference samples, wherein the references are representative of age- and gender-matched human subjects who are not suffering from a cardiovascular disease; and

identifying the subject as having atherosclerotic coronary artery disease or as having a coronary atherosclerotic plaque if measured levels of the analytes in the blood sample, the serum sample or the plasma sample are increased or decreased relative to the amounts of the analytes in the reference samples, wherein valylleucine is decreased, glutamate is increased, acisoga is increased, urate is increased, glucuronate is increased, fucose is increased, C4 is increased, and mannose is increased.

Any of the panels above may further include the analysis of age and gender.

In another example, the disclosure provides a method comprising measuring by mass spectrometry the levels of each of a plurality of metabolites in a blood sample obtained from a human subject, wherein the plurality of metabolites is selected from the group consisting of (i) valylleucine, glutamate, acisoga, urate, glucuronate, fucose, butyrylcarnitine (C4) and mannose; (ii) cisoga, o.cresol.sulfate, threonate and cysteine.glutathione.disulfide; (iii) N.acetylphenylalanine, N.acetylleucine, valylleucine, xylitol, 2.hydroxyhippurate (salicylurate), glycylphenylalanine, serylleucine and fucose; (iv) glutamate, acisoga, valylleucine, mannose, glucuronate, urate, valerylcarnitine (C5) and 12.HETE; m(v) o.cresol.sulfate, acisoga, cysteine.glutathione.disulfide, glucose, 1.nonadecanoylglycerophosphocholine (19:0) and threonate; (vi) N.acetylphenylalanine, N.acetylleucine, glycylphenylalanine, valylleucine, xylitol, 12.HETE and 2.hydroxyhippurate (salicylurate); (vii) N.acetylthreonine, tigloylglycine, glycerate, valerylcarnitine (C5), threonate, 2.hydroxyhippurate (salicylurate), salicylate and tartronate (hydroxymalonated); (viii) N.acetyl glycine and 3.ethylphenylsulfate; (viv) serotonin (5HT), N.acetylputrescine, leucylleucine, propionylglycine (C3), cholate, glycocholenate.sulfate, asparagine and 3.ethylphenylsulfate; (x) acisoga, mannose, valerylcarnitine (C5), 1.linoleoyl.GPE (18.2), glyoursodeoxycholate, threonate, 2.hydroxyhippurate (salicylurate) and salicylate; (xi) N.acetyl glycine, threonate, 2.hydroxyhippurate (salicylurate), 3.ethylphenylsulfate, salicylate; and(xii) asparagine, taurine, acisoga, 1.oleoylglycerol

What is claimed is:

1. A method for evaluating a human subject for having atherosclerotic coronary artery disease (ASCAD) or as having a coronary atherosclerotic plaque, the method comprising:
 - measuring the levels of each analyte within a panel of analyte biomarkers in a blood sample, a serum sample or a plasma sample that has been obtained from the subject, wherein the panel of analyte biomarkers comprises valylleucine, glutamate, acisoga, urate, glucuronate, fucose, butyrylcarnitine (C4) and mannose;
 - comparing the measured levels of the analytes in the blood sample, the serum sample or the plasma sample with one or more reference samples, wherein the references are representative of age- and gender-matched human subjects who are not suffering from a cardiovascular disease; and
 - identifying the subject as having atherosclerotic coronary artery disease or as having a coronary atherosclerotic plaque if measured levels of the analytes in the blood sample, the serum sample or the plasma sample are increased or decreased relative to the amounts of the analytes in the reference samples, wherein valylleucine is decreased, glutamate is increased, acisoga is increased, urate is increased, glucuronate is increased, fucose is increased, C4 is increased, and mannose is increased.
2. The method of claim 1, wherein the levels are measured using mass spectrometry (MS) analysis, optionally wherein the MS analysis comprises liquid chromatography-tandem mass spectrometry (UPLC-MS/MS) or gas chromatography-mass spectrometry (GC-MS).
3. The method of claim 1 or 2, wherein the subject has atherosclerosis, optionally wherein the subject presents with symptoms of atherosclerotic CAD comprising chest pain, angina, angina equivalent, dyspnea, or dyspnea on exertion, and optionally wherein the subject has no previous history of coronary artery disease.
4. The method of any one of claims 1 to 3, wherein the subject presents with risk factors associated with coronary artery disease selected from the group

consisting of male gender, hypertension, dyslipidemia, diabetes, and a family history of coronary artery disease.

5. The method of any one of claims 1 to 4, wherein the reference sample comprises predetermined, statistically significant reference analyte levels.

6. The method of any one of claims 1 to 5, further comprising modifying the subject's clinical record to identify the subject as having atherosclerotic coronary artery disease or as having a coronary atherosclerotic plaque, optionally wherein the clinical record is stored in a computer readable medium.

7. Use of a composition comprising an effective amount of a therapeutic agent selected from the group consisting of a statin, cholesterol absorption inhibitors, niacin-derivatives, omega-3-fatty acid compounds, bile acid sequestrants, anti-platelet agents, aldosterone blockers, angiotensin-converting enzyme (ACE) inhibitors, angiotensin-receptor blockers (ARBs), beta blockers, diuretics, digitalis, hydralazine and nitrates, warfarin and aspirin in the manufacture of a medicament for treating atherosclerotic coronary artery disease or coronary atherosclerotic plaque in a subject that has been identified by the method of claim 1 as having atherosclerotic coronary artery disease or as having coronary atherosclerotic plaque.