What is claimed:

1. A method for diagnosing the presence of a cancer cell in an individual comprising the steps of:

obtaining a first expression profile from a blood phagocytic cell from an individual;

obtaining a second expression profile from a blood non-phagocytic cell from the individual;

comparing the first and second expression profiles;

identifying differential expression of one or more markers specific to the first expression profile; and

relating the differential expression of the one or more markers specific to the first expression profile to the presence of a cancer cell in the individual.

2. The method of claim 1, wherein the one or more markers are selected from the group consisting of DNA, RNA, protein, lipid, carbohydrate and combinations thereof.

3. The method of claim 1, wherein the blood phagocytic cell is selected from the group consisting of one or more of a neutrophil, a macrophage, a monocyte, a dendritic cell and a foam cell.

4. The method of claim 1, wherein the blood non-phagocytic cell is selected from the group consisting of one or more of a T cell, a B cell, a null cell and a basophil.

5. The method of claim 1, wherein the blood phagocytic cell and the blood non-phagocytic cell are isolated from whole blood, urine, stool, saliva, lymph or cerebrospinal fluid.

6. The method of claim 5, wherein the blood phagocytic cell and the blood non-phagocytic cell are isolated using antibodies.

7. The method of claim 5, wherein the blood phagocytic cell and the blood non-phagocytic cell are separated by fluorescence activated cell sorting.

8. The method of claim 5, wherein the blood phagocytic cell and the blood non-phagocytic cell are separated using a ligand that binds to a molecular receptor expressed on the plasma membranes of WBC populations.

9. The method of claim 5, wherein the blood phagocytic cell and the blood non-phagocytic cell are separated by one or methods selected from the group consisting of filtration, gradient-based centrifugation, elution, microfluidics.

10. The method of claim 1, wherein the blood phagocytic cell and the blood non-phagocytic cell are isolated from a population of white blood cells.

11. The method of claim 10, wherein the blood phagocytic cell and the blood non-phagocytic cell are isolated using antibodies.

12. The method of claim 10, wherein the blood phagocytic cell and the blood non-phagocytic cell are separated by one or more methods selected from the group consisting of fluorescence activated cell sorting, filtration, gradient-based centrifugation, elution and microfluidics.

13. The method of claim 10, wherein the blood phagocytic cell and the blood non-phagocytic cell are separated using a ligand that binds to molecular receptors expressed on the plasma membranes of WBC populations.

14. The method of claim 1, wherein the individual has one or more of occult cancer, previously diagnosed primary cancer and metastatic cancer.

15. The method of claim 1, further comprising the step of relating the presence of one or more markers to efficacy of a cancer therapy.

16. The method of claim 1, wherein the marker is selected from one or more of DNA, RNA and microRNA corresponding one or more of a cancer gene, an oncogene and a tumor suppressor gene.

17. The method of claim 1, wherein the marker is one or both of a protein and a polypeptide encoded by one or more of a cancer gene, and oncogene and a tumor suppressor gene.

18. A method for identifying a tumor-specific signature in an individual having cancer comprising the steps of:

obtaining a first expression profile from a blood phagocytic cell from an individual having cancer;

obtaining a second expression profile from a blood non-phagocytic cell from the individual having cancer;

comparing the first and second expression profiles;

identifying differential expression of two or more markers specific to the first expression profile; and

relating the differential expression of the two or more markers specific to a tumor-specific signature in the individual having cancer.

19. The method of claim 18, wherein the two or more markers are selected from the group consisting of DNA, RNA, protein, lipid, carbohydrate and combinations thereof.

20. The method of claim 18, wherein the two or more markers are DNA or RNA corresponding to two or more cancer genes, oncogenes, tumor suppressor genes or combinations thereof.

21. The method of claim 18, wherein the two or more markers are proteins or polypeptides encoded by two or more cancer genes, oncogenes, tumor suppressor genes or combinations thereof.

22. A method for diagnosing the presence of a cancer cell in an individual comprising the steps of:

obtaining a first expression profile from a blood phagocytic cell from an individual;

obtaining a second expression profile from a blood non-phagocytic cell from the individual;

comparing the first and second expression profiles;

identifying the presence of a circulating tumor cell or subcellular fragment thereof specific to the first expression profile; and

relating the presence of a circulating tumor cell or subcellular fragment thereof to the presence of a cancer cell in the individual.

23. The method of claim 22, wherein an increase in the quantity of a marker in the first expression profile relative to the second expression profile indicates the presence of one or both of a circulating tumor cell and a subcellular fragment thereof.

24. The method of claim 23, wherein the marker is selected from the group consisting of DNA, RNA, protein, lipid, carbohydrate and combinations thereof.

25. The method of claim 23, wherein the marker is selected from the group consisting of DNA, RNA, microRNA and combinations thereof corresponding to a cancer gene, an oncogene, a tumor suppressor gene or a combination thereof.

26. The method of claim 23, wherein the marker is a protein or polypeptide encoded by a cancer gene, an oncogenes, a tumor suppressor gene or a combination thereof.

27. A method for diagnosing the presence of a cancer cell in an individual comprising the steps of:

isolating a population of phagocytic cells from an individual;

separating 2n phagocytic cells from >2n phagocytic cells;

obtaining a first expression profile from the 2n phagocytic cells;

obtaining a second expression profile from the >2n phagocytic cells;

comparing the first and second expression profiles;

identifying differential expression of one or more markers specific to the first expression profile; and

relating the differential expression of the one or more markers specific to the first expression profile to the presence of a cancer cell in the individual.

28. The method of claim 27, wherein the one or more markers are selected from the group consisting of DNA, RNA, protein, lipid, carbohydrate and combinations thereof.

29. The method of claim 27, wherein the one or more markers are selected from the group consisting of DNA, RNA, microRNA and combinations thereof corresponding to two or more cancer genes, oncogenes, tumor suppressor genes or combinations thereof.

30. The method of claim 27, wherein the one or more markers are proteins or polypeptides encoded by two or more cancer genes, oncogenes, tumor suppressor genes or any combination thereof.

31. The method of claim 27, wherein the blood phagocytic cell is selected from the group consisting of a neutrophil, a macrophage, a monocyte, a dendritic cell, a foam cell and any combination thereof.

32. The method of claim 27, wherein the blood phagocytic cell is isolated from whole blood, urine, stool, saliva, lymph or cerebrospinal fluid.

33. The method of claim 32, wherein the blood phagocytic cell is isolated using antibodies.

34. The method of claim 32, wherein the blood phagocytic cell is separated using one or methods selected from the group consisting of fluorescence activated cell sorting, filtration, gradient-based centrifugation, elution and microfluidics.

35. The method of claim 32, wherein the blood phagocytic cell is separated using a ligand that binds to a molecular receptor expressed on the plasma membranes of WBC populations.

36. A method for diagnosing the presence of an infectious agent in an individual comprising the steps of:

obtaining a first expression profile from a blood phagocytic cell from an individual;

obtaining a second expression profile from a blood non-phagocytic cell from the individual;

comparing the first and second expression profiles;

identifying differential expression of one or more markers specific to the first expression profile; and

relating the differential expression of the one or more markers specific to the first expression profile to the presence of an infectious agent in the individual.

37. The method of claim 36, wherein the one or more markers are selected form the group consisting of pathogen DNA, pathogen RNA, pathogen protein, pathogen polypeptide, pathogen lipid and combinations thereof.

38. The method of claim 36, wherein the infectious agent is selected from the group consisting of a virus, a bacterium, a fungus, a parasite and an infectious protein.

39. A method for identifying an infectious agent-specific signature in an infected individual comprising the steps of:

obtaining a first expression profile from a blood phagocytic cell from an infected individual;

obtaining a second expression profile from a blood non-phagocytic cell from the infected individual;

comparing the first and second expression profiles;

identifying differential expression of two or more markers specific to the first expression profile; and

relating the differential expression of the two or more markers specific to an infectious agent-specific signature in the infected individual.

40. The method of claim 39, wherein the two or more markers are selected form the group consisting of pathogen DNA, pathogen RNA, pathogen protein, pathogen polypeptide, pathogen lipid and combinations thereof.

41. The method of claim 39, wherein the infectious agent is selected from the group consisting of a virus, a bacterium, a fungus, a parasite and an infectious protein.

42. A method for diagnosing the presence of an infectious agent in an individual comprising the steps of:

obtaining a first expression profile from a blood phagocytic cell from an individual;

obtaining a second expression profile from a blood non-phagocytic cell from the individual;

comparing the first and second expression profiles;

identifying the presence of a circulating tumor cell or subcellular fragment thereof specific to the first expression profile; and

relating the presence of a circulating tumor cell or subcellular fragment thereof to the presence of an infectious agent in the individual.

43. A method for diagnosing the presence of an infectious agent in an individual comprising the steps of:

isolating a population of phagocytic cells from an individual;

separating 2n phagocytic cells from >2n phagocytic cells;

obtaining a first expression profile from the 2n phagocytic cells;

obtaining a second expression profile from the >2n phagocytic cells;

comparing the first and second expression profiles;

identifying differential expression of one or more markers specific to the first expression profile; and

relating the differential expression of the one or more markers specific to the first expression profile to the presence of an infectious agent in the individual.

44. The method of claim 43, wherein the one or more markers are selected form the group consisting of pathogen DNA, pathogen RNA, pathogen protein, pathogen polypeptide, pathogen lipid and combinations thereof.

45. The method of claim 43, wherein the infectious agent is selected from the group consisting of a virus, a bacterium, a fungus, a parasite and an infectious protein.

46. The method of claim 43, wherein the blood phagocytic cell is selected from the group consisting of a neutrophil, a macrophage, a monocyte, a dendritic cell, a foam cell and any combination thereof.

47. The method of claim 43, wherein the blood phagocytic cell is isolated from whole blood, urine, stool, saliva, lymph or cerebrospinal fluid.

48. The method of claim 47, wherein the blood phagocytic cell is isolated using antibodies.

49. The method of claim 47, wherein the blood phagocytic cell is separated using one or methods selected from the group consisting of fluorescence activated cell sorting, filtration, gradient-based centrifugation, elution and microfluidics.

50. The method of claim 47, wherein the blood phagocytic cell is separated using a ligand that binds to a molecular receptor expressed on the plasma membranes of WBC populations.

51. One or more markers of a condition differentially expressed between phagocytic cells and nonphagocytic cells from a common source.

52. One or more markers of a condition differentially expressed between phagocytic cells having a DNA content of 2n and phagocytic cells having a DNA content of greater than 2n from a common source.

53. The one or more markers of claim 51 or 52 being DNA, RNA, microRNA, protein, lipid, or carbohydrate or combinations thereof.

54. The one or more markers of claims 51 or 52 wherein the phagocytic cells are neutrophils, macrophages, monocytes, dendritic cells or foam cells or combinations thereof.

55. The one or more markers of claim 51 wherein the nonphagocytic cells are T cells, B cells, null cells, or basophils or combinations thereof.

56. Protein profile, DNA profile, RNA profile, metabolite profile, glycome profile, glycoprotein profile, carbohydrate profile, lipoprotein profile or lipid profile specific to blood phagocytic cells compared to blood nonphagocytic cells from a common source.

57. Protein profile, DNA profile, RNA profile, metabolite profile, glycome profile, glycoprotein profile, carbohydrate profile, lipoprotein profile or lipid profile specific to blood phagocytic cells having a DNA content of greater than 2n compared to blood phagocytic cells having a DNA content of 2n from a common source.

58. A kit for detecting the presence of one or more markers associated with cancer and/or an infectious agent in a biological sample, wherein the kit comprises a labeled compound or agent for detecting a marker polypeptide, protein lipid, oligosaccharide, mRNA, microRNA, or genomic DNA, and a standard such as a non-phagocytic cell or a 2n cell to compare the amount of marker in the sample with the standard.

What is claimed is:

1. A method for diagnosing the presence of a cancer cell in an individual comprising the steps of:

comparing a first expression profile from a blood phagocytic cell from an individual and a second expression profile from a blood non-phagocytic cell of the same individual;

identifying differential expression of one or more markers specific to the first expression profile; and

relating the differential expression of the one or more markers specific to the first expression profile to the presence of a cancer cell in the individual.

2. The method of claim 1, wherein the one or more markers are selected from the group consisting of DNA, RNA, protein, lipid, carbohydrate and combinations thereof.

3. The method of claim 1, wherein the blood phagocytic cell is selected from the group consisting of one or more of a neutrophil, a macrophage, a monocyte, a dendritic cell and a foam cell.

4. The method of claim 1, wherein the blood non-phagocytic cell is selected from the group consisting of one or more of a T cell, a B cell, a null cell and a basophil.

5. The method of claim 1, wherein the blood phagocytic cell and the blood non-phagocytic cell are isolated from whole blood, urine, stool, saliva, lymph or cerebrospinal fluid.

6. The method of claim 5, wherein the blood phagocytic cell and the blood non-phagocytic cell are isolated using antibodies.

7. The method of claim 5, wherein the blood phagocytic cell and the blood non-phagocytic cell are separated by fluorescence activated cell sorting.

8. The method of claim 5, wherein the blood phagocytic cell and the blood non-phagocytic cell are separated using a ligand that binds to a molecular receptor expressed on the plasma membranes of WBC populations.

9. The method of claim 5, wherein the blood phagocytic cell and the blood non-phagocytic cell are separated by one or methods selected from the group consisting of filtration, gradient-based centrifugation, elution, micro fluidics.

10. The method of claim 1, wherein the blood phagocytic cell and the blood non-phagocytic cell are isolated from a population of white blood cells.

11. The method of claim 10, wherein the blood phagocytic cell and the blood non-phagocytic cell are isolated using antibodies.

12. The method of claim 10, wherein the blood phagocytic cell and the blood non-phagocytic cell are separated by one or more methods selected from the group consisting of fluorescence activated cell sorting, filtration, gradient-based centrifugation, elution and micro fluidics.

13. The method of claim 10, wherein the blood phagocytic cell and the blood non-phagocytic cell are separated using a ligand that binds to molecular receptors expressed on the plasma membranes of WBC populations.

14. The method of claim 1, wherein the individual has one or more of occult cancer, previously diagnosed primary cancer and metastatic cancer.

15. The method of claim 1, further comprising the step of relating the presence of one or more markers to efficacy of a cancer therapy.

16. The method of claim 1, wherein the marker is selected from one or more of DNA, RNA and microRNA corresponding one or more of a cancer gene, an oncogene and a tumor suppressor gene.

17. The method of claim 1, wherein the marker is one or both of a protein and a polypeptide encoded by one or more of a cancer gene, and oncogene and a tumor suppressor gene.

18. A method for identifying a tumor- specific signature in an individual having cancer comprising the steps of:

comparing a first expression profile from a blood phagocytic cell from an individual having cancer and a second expression profiles from a blood non-phagocytic cell of the same individual;

identifying differential expression of two or more markers specific to the first expression profile; and

relating the differential expression of the two or more markers specific to a tumor-specific signature in the individual having cancer.

19. The method of claim 18, wherein the two or more markers are selected from the group consisting of DNA, RNA, protein, lipid, carbohydrate and combinations thereof.

20. The method of claim 18, wherein the two or more markers are DNA or RNA corresponding to two or more cancer genes, oncogenes, tumor suppressor genes or combinations thereof.

21. The method of claim 18, wherein the two or more markers are proteins or polypeptides encoded by two or more cancer genes, oncogenes, tumor suppressor genes or combinations thereof.

22. A method for diagnosing the presence of a cancer cell in an individual comprising the steps of:

comparing a first first expression profile from a blood phagocytic cell from an individual and a second expression profile from a blood non-phagocytic cell from the same individual;

identifying the presence of a circulating tumor cell or subcellular fragment thereof specific to the first expression profile; and

relating the presence of a circulating tumor cell or subcellular fragment thereof to the presence of a cancer cell in the individual.

23. The method of claim 22, wherein an increase in the quantity of a marker in the first expression profile relative to the second expression profile indicates the presence of one or both of a circulating tumor cell and a subcellular fragment thereof.

24. The method of claim 23, wherein the marker is selected from the group consisting of DNA, RNA, protein, lipid, carbohydrate and combinations thereof.

25. The method of claim 23, wherein the marker is selected from the group consisting of DNA, RNA, microRNA and combinations thereof corresponding to a cancer gene, an oncogene, a tumor suppressor gene or a combination thereof.

26. The method of claim 23, wherein the marker is a protein or polypeptide encoded by a cancer gene, an oncogenes, a tumor suppressor gene or a combination thereof.

27. A method for diagnosing the presence of a cancer cell in an individual comprising the steps of:

isolating a population of phagocytic cells from an individual;

separating 2n phagocytic cells from >2n phagocytic cells;

obtaining a first expression profile from the 2n phagocytic cells;

obtaining a second expression profile from the >2n phagocytic cells;

comparing the first and second expression profiles;

identifying differential expression of one or more markers specific to the first expression profile; and

relating the differential expression of the one or more markers specific to the first expression profile to the presence of a cancer cell in the individual.

28. The method of claim 27, wherein the one or more markers are selected from the group consisting of DNA, RNA, protein, lipid, carbohydrate and combinations thereof.

29. The method of claim 27, wherein the one or more markers are selected from the group consisting of DNA, RNA, microRNA and combinations thereof corresponding to two or more cancer genes, oncogenes, tumor suppressor genes or combinations thereof.

30. The method of claim 27, wherein the one or more markers are proteins or polypeptides encoded by two or more cancer genes, oncogenes, tumor suppressor genes or any combination thereof.

31. The method of claim 27, wherein the blood phagocytic cell is selected from the group consisting of a neutrophil, a macrophage, a monocyte, a dendritic cell, a foam cell and any combination thereof.

32. The method of claim 27, wherein the blood phagocytic cell is isolated from whole blood, urine, stool, saliva, lymph or cerebrospinal fluid.

33. The method of claim 32, wherein the blood phagocytic cell is isolated using antibodies.

34. The method of claim 32, wherein the blood phagocytic cell is separated using one or methods selected from the group consisting of fluorescence activated cell sorting, filtration, gradient-based centrifugation, elution and microfluidics.

35. The method of claim 32, wherein the blood phagocytic cell is separated using a ligand that binds to a molecular receptor expressed on the plasma membranes of WBC populations.

36. A kit for detecting the presence of one or more markers associated with cancer in a biological sample, wherein the kit comprises a labelled compound or agent for detecting a marker polypeptide, protein lipid, oligosaccharide, mRNA, microRNA, or genomic DNA in accordance to the method of claim 1, 18, 22 or 27.