[0038] In another example, there is provided a method, comprising: obtaining a sample from a subject having a cancer or suspected of having a cancer; processing said sample; performing a binding assay comprising contacting the processed sample with a an antibody to which binds to myristoylated protein, or azido-biotin labeled myristoylated proteins, within the sample to form a complex between the detectable label and myristoylated protein present in the sample, said binding assay generating at least one myristoylation profile indicative of said complex; wherein administering an NMT1 inhibitor to said subject is indicated when said myristoylation profile indicates said cancer is deficient in NMT2, optionally as compared to a control

[0038a] In one aspect, the present disclosure refers to use of a composition comprising an NMT1 inhibitor and doxorubicin in the manufacture of a medicament for treating a subject having a cancer or suspected of having a cancer identified by a method, comprising: processing a sample from the subject having a cancer or suspected of having a cancer; and performing a binding assay comprising contacting the processed sample with an antibody which binds to myristoylated protein, or azido-biotin labeled myristoylated proteins, within the sample to form a complex between the detectable label and myristoylated protein present in the sample, said binding assay generating at least one myristoylation profile indicative of said complex; wherein the composition is to be administered to said subject when said myristoylation profile has been determined as deficient in NMT2 defined by inhibition, reduction or elimination of NMT2 synthesis, levels, activity, or function as well as inhibition of the induction or stimulation of synthesis, levels, activity or function of the protein NMT2, as compared to a control; and wherein the NMT1 inhibitor is selected from DDD85646, and DDD86481.

[0039] In another example, there is provided a method, comprising: obtaining a sample from a subject having a cancer or suspected of having a cancer; processing said sample; performing a binding assay comprising contacting the processed sample with a an antibody to which binds to myristoylated protein, or azido-biotin labeled myristoylated proteins, within the sample to form a complex between the detectable label and myristoylated protein present in the sample, said binding assay generating at least one myristoylation profile indicative of said

[0090] In a specific example, wherein instrumentation having a detector set to detect the complex between the detectable label and NMT2 nucleic acid present in the sample is used to determine an amount of complex in said sample.

[0091] In a specific example, wherein said instrumentation is a spectrophotometer, spectrofluorometer, optical device, or electrochemical device.

[0092] In a specific example, said wherein said cancer is lymphoma, B cell lymphoma, follicular lymphoma, diffuse large B-cell lymphoma, mantle cell lymphoma, B-CLL/SLL, immunocytoma/Waldenstrom's, MALT-type/monocytoid B cell lymphoma, Burkitt's lymphoma, a pediatric lymphoma, anaplastic large cell lymphoma, acute myeloid leukemia, Blast Phase Chronic Myeloid Leukaemia, Burkitt's Lymphoma, Plasma Cell Myeloma, Intestinal Adenocarcinoma, Lung mixed Adenosquamous Carcinoma, Lung Small Cell Carcinoma, Lung, Oesophagus Squamous Cell Carcinoma, Bone, Breast Ductal Carcinoma, Stomach Diffuse Adenocarcinoma, Thyroid Medullary Carcinoma, urinary Tract Transitional Cell Carcinoma, myeloma, ovarian clear cell carcinoma, transition cell carcinoma (ureter and bladder cancer), chronic myelogenous leukemia (CML), lymphoma-CLL, breast carcinoma, colorectal adenocarcinoma, pancreas adenocarcinoma, ovarian carcinoma, non-small cell lung carcinoma, osteosarcoma, melanoma, gastric adenocarcinoma, endometrial adenocarcinoma, esophageal squamous carcinoma.

[0093] In a specific example, said subject is a human.

[0094] In another example there is provided a method for identifying a subject suitable for treatment with an NMT1 inhibitor, comprising: obtaining a sample from a subject having a cancer or suspected of having a cancer; processing said sample; performing a binding assay comprising contacting the processed sample with a an antibody to which binds to myristoylated protein, or azido-biotin labeled myristoylated proteins, within the sample to form a complex between the detectable label and myristoylated protein present in the sample, said binding assay generating at least one myristoylation profile indicative of said complex; wherein administering an NMT1 inhibitor to said subject is indicated when said myristoylation profile indicates said cancer is deficient in NMT2, optionally as compared to a control

[0094a] In one aspect, the present disclosure refers to a method for identifying a subject suitable for treatment with a composition comprising an NMT1 inhibitor and doxorubicin, comprising: processing a sample from a subject having a cancer or suspected of having a cancer; and performing a binding assay comprising contacting the processed sample with an antibody which binds to myristoylated protein, or azido-biotin labeled myristoylated proteins, within the sample to form a complex between the detectable label and myristoylated protein present in the sample, said binding assay generating at least one myristoylation profile indicative of said complex; wherein the composition is to be administered to said subject when said myristoylation profile has been determined as deficient in NMT2 defined by inhibition, reduction or elimination of NMT2 synthesis, levels, activity, or function as well as inhibition of the induction or stimulation of synthesis, levels, activity or function of the protein NMT2, as compared to a control; and wherein the NMT1 inhibitor is selected from DDD85646, and DDD86481.

[0095] In a specific example, said processing comprises treating said sample with alyknyl-myristate and desthiobiotin azido-PEG biotin.

THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

1. Use of a composition comprising an NMT1 inhibitor and doxorubicin in the manufacture of a medicament for treating a subject with a cancer or suspected of having a cancer identified by a method, comprising: processing a sample from the subject with a cancer or suspected of having a cancer; and performing a binding assay comprising contacting the processed sample with an antibody to NMT2 protein to form a complex between the antibody and NMT2 protein present in the processed sample, said binding assay generating at least one assay result indicative of said complex; wherein the composition is to be administered to said subject when the amount of NMT2 protein in said sample has been determined as absent, or low, as compared to a control; and wherein the NMT1 inhibitor is selected from DDD85646, and DDD86481.

2. The use of claim 1, wherein said binding assay comprises fluorescence activated cell sorting, enzyme linked immunosorbent assay, immunohistochemistry, quantitative immunohistochemistry, fluorescence resonance energy transfer, Forster resonance energy transfer, biomolecular fluorescence complementation, mass spectrometry, immunoblot assay or coimmunoprecipitation assay.

3. The use of any one of claims 1 to 2, wherein instrumentation having a detector set to detect the complex formed between said antibody and said NMT2 in said sample is used to determine an amount of complex in said sample.

4. The use of claim 3, wherein said instrumentation is a spectrophotometer, spectrofluorometer, optical device, or electrochemical device.

5. The use of anyone of claims 1 to 4, wherein said cancer is lymphoma, B cell lymphoma, follicular lymphoma, diffuse large B-cell lymphoma, mantle cell lymphoma, B-CLL/SLL, immunocytoma/Waldenstrom's, MALT-type/monocytoid B cell lymphoma, Burkitt’s lymphoma, a pediatric lymphoma, anaplastic large cell lymphoma, acute myeloid leukemia, Blast Phase Chronic Myeloid Leukaemia, Burkitt’s Lymphoma, Plasma Cell Myeloma, Intestinal Adenocarcinoma, Lung mixed Adenosquamous Carcinoma, Lung Small Cell Carcinoma, Lung, Oesophagus Squamous Cell Carcinoma, Bone, Breast Ductal Carcinoma, Stomach Diffuse Adenocarcinoma, Thyroid Medullary Carcinoma, urinary Tract Transitional Cell Carcinoma, myeloma, ovarian clear cell carcinoma, transition cell carcinoma (ureter and

bladder cancer), chronic myelogenous leukemia (CML), lymphoma-CLL, breast carcinoma, colorectal adenocarcinoma, pancreas adenocarcinoma, ovarian carcinoma, non-small cell lunch carcinoma, osteosarcoma, melanoma, gastric adenocarcinoma, endometrial adenocarcinoma, esophageal squamous carcinoma.

6. The use of any one of claims 1 - 5, wherein said subject is human.

7. Use of a composition comprising an NMT1 inhibitor and doxorubicin in the manufacture of a medicament for treating a subject having a cancer or suspected of having a cancer identified by a method, comprising: processing a sample from the subject having a cancer or suspected of having a cancer; and performing a binding assay comprising contacting the processed sample with a detectable label which binds to NMT2 nucleic acid to form a complex between the detectable label and NMT2 nucleic acid present in the sample, said binding assay generating at least one assay result indicative of said complex; wherein the composition is to be administered to said subject when the amount to NMT2 nucleic acid in said sample has been determined as absent, or low, as compared to a control; and wherein the NMT1 inhibitor is selected from DDD85646, and DDD86481.

8. The use of claim 7, wherein said binding assay comprises, a hybridization assay using detectably labeled DNA or RNA probes.

9. The use of claim 8, wherein said hybridization assay is quantitative or semi-quantitative.

10. The use of claim 9, wherein said hybridization assay is RT-PCR, in situ hybridization, RNA protection assay ("RPA"), cDNA and oligonucleotide microarray, representation difference analysis ("RDA"), differential display, EST sequence analysis, serial analysis of gene expression ("SAGE"), and multiplex ligation-mediated amplification with the Luminex FlexMAP ("LMF").

11. The use of claim 10, wherein instrumentation having a detector set to detect the complex between the detectable label and NMT2 nucleic acid present in the sample is used to determine an amount of complex in said sample.

12. The use of claim 11, wherein said instrumentation is a spectrophotometer, spectrofluorometer, optical device, or electrochemical device.

13. The use of anyone of claims 7 – 12, wherein said cancer is lymphoma, B cell lymphoma, follicular lymphoma, diffuse large B-cell lymphoma, mantle cell lymphoma, B-CLL/SLL, immunocytoma/Waldenstrom's, MALT-type/monocytoid B cell lymphoma, Burkitt's lymphoma, a pediatric lymphoma, anaplastic large cell lymphoma, acute myeloid leukemia, Blast Phase Chronic Myeloid Leukaemia, Burkitt's Lymphoma, Plasma Cell Myeloma, Intestinal Adenocarcinoma, Lung mixed Adenosquamous Carcinoma, Lung Small Cell Carcinoma, Lung, Oesophagus Squamous Cell Carcinoma, Bone, Breast Ductal Carcinoma, Stomach Diffuse Adenocarcinoma, Thyroid Medullary Carcinoma, urinary Tract Transitional Cell Carcinoma, myeloma, ovarian clear cell carcinoma, transition cell carcinoma (ureter and bladder cancer), chronic myelogenous leukemia (CML), lymphoma-CLL, breast carcinoma, colorectal adenocarcinoma, pancreas adenocarcinoma, ovarian carcinoma, non-small cell lung carcinoma, osteosarcoma, melanoma, gastric adenocarcinoma, endometrial adenocarcinoma, esophageal squamous carcinoma.

14. The use of any one of claims 7 to 13, wherein said subject is a human.

15. Use of a composition comprising an NMT1 inhibitor and doxorubicin in the manufacture of a medicament for treating a subject having a cancer or suspected of having a cancer identified by a method, comprising: processing a sample from the subject having a cancer or suspected of having a cancer; and performing a binding assay comprising contacting the processed sample with an antibody which binds to myristoylated protein, or azido-biotin labeled myristoylated proteins, within the sample to form a complex between the detectable label and myristoylated protein present in the sample, said binding assay generating at least one myristoylation profile indicative of said complex; wherein the composition is to be administered to said subject when said myristoylation profile has been determined as deficient in NMT2 defined by inhibition, reduction or elimination of NMT2 synthesis, levels, activity, or function as well as inhibition of the induction or stimulation of synthesis, levels, activity or function of the protein NMT2, as compared to a control; and wherein the NMT1 inhibitor is selected from DDD85646, and DDD86481.

16. The use of claim 15, wherein said processing comprises treating said sample with ω-alkynyl-myristate and desthiobiotin azido-PEG biotin .

17. The use of claim 15 or 16, wherein said binding assay comprises fluorescence activated cell sorting, enzyme linked immunosorbent assay, immunohistochemistry, quantitative

immunohistochemistry, fluorescence resonance energy transfer, Forster resonance energy transfer, biomolecular fluorescence complementation, mass spectrometry, immunoblot assay or coimmunoprecipitation assay.

18. The use of claim 17, wherein instrumentation having a detector set to detect the complex formed between said antibody and said NMT2 in said sample is used to determine an amount of complex in said sample.

19. The use of claim 18, wherein said instrumentation is a spectrophotometer, spectrofluorometer, optical device, or electrochemical device.

20. The use of anyone of claims 15 to 19, wherein said cancer is lymphoma, B cell lymphoma, follicular lymphoma, diffuse large B-cell lymphoma, mantle cell lymphoma, B-CLL/SLL, immunocytoma/Waldenstrom's, MALT-type/monocytoid B cell lymphoma, Burkitt's lymphoma, a pediatric lymphoma, anaplastic large cell lymphoma, acute myeloid leukemia, Blast Phase Chronic Myeloid Leukaemia, Burkitt's Lymphoma, Plasma Cell Myeloma, Intestinal Adenocarcinoma, Lung mixed Adenosquamous Carcinoma, Lung Small Cell Carcinoma, Lung, Oesophagus Squamous Cell Carcinoma, Bone, Breast Ductal Carcinoma, Stomach Diffuse Adenocarcinoma, Thyroid Medullary Carcinoma, urinary Tract Transitional Cell Carcinoma, myeloma, ovarian clear cell carcinoma, transition cell carcinoma (ureter and bladder cancer), chronic myelogenous leukemia (CML), lymphoma-CLL, breast carcinoma, colorectal adenocarcinoma, pancreas adenocarcinoma, ovarian carcinoma, non-small cell lung carcinoma, osteosarcoma, melanoma, gastric adenocarcinoma, endometrial adenocarcinoma, esophageal squamous carcinoma.

21. The use of any one of claims 17 - 20, wherein said subject is human.

22. A method for identifying a subject suitable for treatment with a composition comprising NMT1 inhibitor and doxorubicin, comprising: processing a sample from said subject with a cancer or suspected of having a cancer; and performing a binding assay comprising contacting the processed sample with an antibody to NMT2 to form a complex between the antibody and NMT2 protein present in the processed sample, said binding assay generating at least one assay result indicative of said complex; wherein the subject is identified as suitable for treatment with said composition when the amount of NMT2 protein in said sample is absent or low, as compared to a control; and wherein the NMT1 inhibitor is selected from DDD85646, and DDD86481.

23. The method of claim 22, wherein said binding assay comprises fluorescence activated cell sorting, enzyme linked immunosorbent assay, immunohistochemistry, quantitative immunohistochemistry, fluorescence resonance energy transfer, Forster resonance energy transfer, biomolecular fluorescence complementation, mass spectrometry, immunoblot assay or coimmunoprecipitation assay.

24. The method of any one of claim 22 - 23, wherein instrumentation having a detector set to detect the complex formed between said antibody and said NMT2 in said sample is used to determine an amount of complex in said sample.

25. The method of claim 24, wherein said instrumentation is a spectrophotometer, spectrofluorometer, optical device, or electrochemical device.

26. The method of anyone of claims 22 to 25, wherein said cancer is lymphoma, B cell lymphoma, follicular lymphoma, diffuse large B-cell lymphoma, mantle cell lymphoma, B-CLL/SLL, immunocytoma/Waldenstrom's, MALT-type/monocytoid B cell lymphoma, Burkitt's lymphoma, a pediatric lymphoma, anaplastic large cell lymphoma, acute myeloid leukemia, Blast Phase Chronic Myeloid Leukaemia, Burkitt's Lymphoma, Plasma Cell Myeloma, Intestinal Adenocarcinoma, Lung mixed Adenosquamous Carcinoma, Lung Small Cell Carcinoma, Lung, Oesophagus Squamous Cell Carcinoma, Bone, Breast Ductal Carcinoma, Stomach Diffuse Adenocarcinoma, Thyroid Medullary Carcinoma, urinary Tract Transitional Cell Carcinoma, myeloma, ovarian clear cell carcinoma, transition cell carcinoma (ureter and bladder cancer), chronic myelogenous leukemia (CML), lymphoma-CLL, breast carcinoma, colorectal adenocarcinoma, pancreas adenocarcinoma, ovarian carcinoma, non-small cell lung carcinoma, osteosarcoma, melanoma, gastric adenocarcinoma, endometrial adenocarcinoma, esophageal squamous carcinoma.

27. The method of any one of claims 22 - 26, wherein said subject is human.

28. A method for identifying a subject suitable for treatment with a composition comprising an NMT1 inhibitor and doxorubicin, comprising: processing a sample from a subject having a cancer or suspected of having a cancer; and performing a binding assay comprising contacting the processed sample with a detectable label which binds to NMT2 nucleic acid to form a complex between the detectable label and NMT2 nucleic acid present in the sample, said

binding assay generating at least one assay result indicative of said complex; wherein the subject is identified as suitable for administration of the composition when the amount to NMT2 nucleic acid in said sample is low or absent, as compared to a control; and wherein the NMT1 inhibitor is selected from DDD85646, and DDD86481.

29. The method of claim 28, wherein said binding assay comprises, a hybridization assay using detectably labeled DNA or RNA probes.

30. The method of claim 29, wherein said hybridization assay is quantitative or semi-quantitative.

31. The method of claim 30, wherein said hybridization assay is RT-PCR, in situ hybridization, RNA protection assay ("RPA"), cDNA and oligonucleotide microarray, representation difference analysis ("RDA"), differential display, EST sequence analysis, serial analysis of gene expression ("SAGE"), and multiplex ligation-mediated amplification with the Luminex FlexMAP ("LMF").

32. The method of claim 31, wherein instrumentation having a detector set to detect the complex between the detectable label and NMT2 nucleic acid present in the sample is used to determine an amount of complex in said sample.

33. The method of claim 32, wherein said instrumentation is a spectrophotometer, spectrofluorometer, optical device, or electrochemical device.

34. The method of anyone of claims 28 –33, wherein said cancer is lymphoma, B cell lymphoma, follicular lymphoma, diffuse large B-cell lymphoma, mantle cell lymphoma, B-CLL/SLL, immunocytoma/Waldenstrom's, MALT-type/monocytoid B cell lymphoma, Burkitt’s lymphoma, a pediatric lymphoma, anaplastic large cell lymphoma, acute myeloid leukemia, Blast Phase Chronic Myeloid Leukaemia, Burkitt’s Lymphoma, Plasma Cell Myeloma, Intestinal Adenocarcinoma, Lung mixed Adenosquamous Carcinoma, Lung Small Cell Carcinoma, Lung, Oesophagus Squamous Cell Carcinoma, Bone, Breast Ductal Carcinoma, Stomach Diffuse Adenocarcinoma, Thyroid Medullary Carcinoma, urinary Tract Transitional Cell Carcinoma, myeloma, ovarian clear cell carcinoma, transition cell carcinoma (ureter and bladder cancer), chronic myelogenous leukemia (CML), lymphoma-CLL, breast carcinoma, colorectal adenocarcinoma, pancreas adenocarcinoma, ovarian carcinoma, non-

small cell lung carcinoma, osteosarcoma, melanoma, gastric adenocarcinoma, endometrial adenocarcinoma, esophageal squamous carcinoma.

35. The method of any one of claims 28 to 34, wherein said subject is a human.

36. A method for identifying a subject suitable for treatment with a composition comprising an NMT1 inhibitor and doxorubicin, comprising: processing a sample from a subject having a cancer or suspected of having a cancer; and performing a binding assay comprising contacting the processed sample with an antibody which binds to myristoylated protein, or azido-biotin labeled myristoylated proteins, within the sample to form a complex between the detectable label and myristoylated protein present in the sample, said binding assay generating at least one myristoylation profile indicative of said complex; wherein the composition is to be administered to said subject when said myristoylation profile has been determined as deficient in NMT2 defined by inhibition, reduction or elimination of NMT2 synthesis, levels, activity, or function as well as inhibition of the induction or stimulation of synthesis, levels, activity or function of the protein NMT2, as compared to a control; and wherein the NMT1 inhibitor is selected from DDD85646, and DDD86481.

37. The method of claim 36, wherein said processing comprises treating said sample with alyknyl-myristate and desthiobiotin azido-PEG biotin.

38. The method of claims 36 or 37, wherein said binding assay comprises fluorescence activated cell sorting, enzyme linked immunosorbent assay, immunohistochemistry, quantitative immunohistochemistry, fluorescence resonance energy transfer, Forster resonance energy transfer, biomolecular fluorescence complementation, mass spectrometry, immunoblot assay or coimmunoprecipitation assay.

39. The method of claim 38, wherein instrumentation having a detector set to detect the complex formed between said antibody and said NMT2 in said sample is used to determine an amount of complex in said sample.

40. The method of claim 39, wherein said instrumentation is a spectrophotometer, spectrofluorometer, optical device, or electrochemical device.

41. The method of anyone of claims 36 to 40, wherein said cancer is lymphoma, B cell lymphoma, follicular lymphoma, diffuse large B-cell lymphoma, mantle cell lymphoma, B-

CLL/SLL, immunocytoma/Waldenstrom's, MALT-type/monocytoid B cell lymphoma, Burkitt's lymphoma, a pediatric lymphoma, anaplastic large cell lymphoma, acute myeloid leukemia, Blast Phase Chronic Myeloid Leukaemia, Burkitt's Lymphoma, Plasma Cell Myeloma, Intestinal Adenocarcinoma, Lung mixed Adenosquamous Carcinoma, Lung Small Cell Carcinoma, Lung, Oesophagus Squamous Cell Carcinoma, Bone, Breast Ductal Carcinoma, Stomach Diffuse Adenocarcinoma, Thyroid Medullary Carcinoma, urinary Tract Transitional Cell Carcinoma, myeloma, ovarian clear cell carcinoma, transition cell carcinoma (ureter and bladder cancer), chronic myelogenous leukemia (CML), lymphoma-CLL, breast carcinoma, colorectal adenocarcinoma, pancreas adenocarcinoma, ovarian carcinoma, non-small cell lung carcinoma, osteosarcoma, melanoma, gastric adenocarcinoma, endometrial adenocarcinoma, esophageal squamous carcinoma.

42. The method of any one of claims 36 - 41, wherein said subject is human.