Example 14. The protocols of the assays employed in the "Clinical Response Predictor" Analysis have been provided in Example 7 and the concept of M score is presented in Example 8. The "Clinical Response Predictor" system is further tested to predict the response of multiple solid cancers in Examples 9, 13 and 14. Example 10 shows the entire protocol of "Clinical Response Predictor" comparing the results obtained with clinical outcome in order to validate the instant analysis. Example 11 and 12 provide for experimental data in order to showcase that the instant "Clinical Response Predictor" analysis is a better response predictor than biomarkers cell lines respectively.

Example 1: Preparation and Coating of Suitable ECM Composition on Cell Plates:

Source of the tumor is primary tumor tissue from patient, derived by standard protocols. Alternatively, primary human tumor tissue is implanted sub-cutaneously in immune-compromised SCID mice to generate primary human tumor xenografts for a variety of solid cancers.. Following tumor volume measurement of around $1000mm^3$, tumor is excised from the xenograft. ECM is isolated from either patient tumor or from xenograft tumor tissue according to the protocol protocol provided below.

Isolation of human ECM and its characterization:

Surgically removed fresh tumor tissues are dissected, cut into 1–2mm sections, and suspended in dispase solution (Stem cell Technologies Inc.) and incubated for 15min at 48°C. The tissues are homogenized in a high salt buffer solution containing 0.05M Tris pH 7.4, 3.4M sodium chloride, 4mM of EDTA, 2mM of N-ethylmaleimide and protease (Roche) and phosphatise inhibitors (Sigma). The homogenized mixture is centrifuged at 7000g for 15min and supernatant is discarded. The pellet is incubated in 2M urea buffer (0.15M sodium chloride and 0.05M Tris pH 7.4) and stirred overnight at 48°C. The mixture is then finally centrifuged at 14,000g for 20min, and resuspended in the 2M urea buffer and stored at -80°C in aliquots. Protein estimation is done using DC protein assay kit (modified Lowry, Bio-Rad) to estimate the quantity of ECM proteins isolated for quantification. Coating of tissue culture dishes are carried out with protein extracts at 37°C for 3hr.

Following ECM isolation from a variety of tumor tissue for different indications, the composition of these ECM is analyzed by mass spectrometry, the results of which are illustrated in ~~Figure 14~~ tables 1A to 1G. Distribution and abundance of different compositions of the Extra

The viability of tumor tissues on differentially coated ECM Matrix is monitored for a period of about 3 to about 7 days at 37°C at 5% CO_2 ~~and the results obtained are tabulated in tables 1A to 1G~~.

Table 1A: STOMACH

The table below lists the components of ECM that have been isolated from gastric tumors and analyzed by LCMS.

S.No	Protein	Name	% range (n=6)
1	B1	Collagen alpha-1 (I) chain	0.7-49.5
2	B2	Collagen alpha-2 (I) chain	0.4-39.8
3	B15	Collagen alpha-1 (III) chain	1.1-38.3
4	B33	COL1A1 and PDGFB fusion protein	0.8-21
5	B34	Tuberin isoform 1	0.5-15
6	B35	Tuberin isoform 4	1-19.3
7	B36	Tuberin isoform 5	0.3-35.8
8	B37	Protocadherin alpha-8 isoform 1 precursor	0.9-6.3
9	B38	Protocadherin alpha-8 isoform 2 precursor	0-3.5
10	B39	Integrin alpha-M isoform 2 precursor	1-44.4
11	B40	Integrin alpha-M isoform 1 precursor	1.5-12.7

1	C1	Actin, cytoplasmic 1	0.2-25
2	C2	Actin, cytoplasmic 2	0.4-37
3	C3	Actin, a cardiac muscle	2-33.7
4	C4	Actin, a skeletal muscle	0.2-21.3
5	C9	Cytokeratin, type 1	0.1-35.5
6	C10	Cytokeratin, type 2	0.6-21.7
7	C19	Actin, aortic smooth muscle 1	0.4-28.9
8	C20	Actin, gamma-enteric smooth muscle isoform 2 precursor	0.2-19.2
9	C21	Actin, aortic smooth muscle 2	0-9.7
10	C30	Dystonin	0.2-11.3

1	R23	Protein S100-A8	1-20.3
2	R25	Annexin A1	3-15.1
3	R34	Protein S100-A9	2.8-12.8
4	R64	Hyaluronan synthase 2	0.2-8.6
5	R65	MICAL C-terminal-like protein	0.1-6.6
6	R66	Chloride channel CLIC-like protein 1	1-16.6
7	R67	GDNF family receptor alpha-1	0.2-23.7
8	R68	Rab proteins geranylgeranyltransferase component A 1	0.9-25.7
9	R69	Basonuclin-1	0.9-30.9

We Claim:

1) An Extra Cellular Matrix [ECM] composition comprising at least three components selected from group having collagen 1, collagen 3, collagen 4, collagen 6, Fibronectin, Vitronectin, Cadherin, Filamin A, Vimentin, Laminin, Decorin, Tenascin C, Osteopontin, Basement membrane proteins, Cytoskeletal proteins and Matrix proteins.

2) A method to obtain Extra Cellular Matrix [ECM] composition as claimed in claim 1, said method comprises acts of:
   a. subjecting tumor tissue to biochemical assay to identify components of the ECM;
   b. combining the components of the ECM selected from group of collagen 1, collagen 3, collagen 4, collagen 6, Fibronectin, VitroNectin , Cadherin, FilaminA, Vimentin, Laminin, Decorin, Tenascin C, Osteopontin, Basement membrane protein, Cytoskeletal protein and Matrix protein to obtain the ECM composition.

3) A tumor microenvironment platform for culturing tumor tissue, said microenvironment comprising ECM composition as claimed in claim 1, culture medium optionally alongwith serum, plasma or autologous PBMCs and drug.

4) A method for obtaining tumor microenvironment platform for culturing tumor tissue, said method comprising act of coating platform with ECM composition as claimed in claim 1 and adding culture medium optionally alongwith serum, plasma or autologous PBMCs and drug, to the platform to obtain the tumor microenvironment platform.

5) A method of organotypic culturing of tumor tissue, said method comprising act of culturing the tumor tissue on tumor microenvironment platform as claimed in claim 3 to obtain the organotypic culture.

6) A method of predicting response of a tumor subject to drug(s), said method comprising acts of:
   a. culturing the subject's tumor tissue on tumor microenvironment platform as claimed in claim 3, to obtain cultured tumor tissue;
   b. treating the cultured tumor tissue with the drug(s) and conducting assay;

c. converting the assay's readout into numeric metric to obtain sensitivity index and thereby, predicting the response of the subject to the drug(s); and
d. optionally, correlating the sensitivity index to clinical response of the subject to the drug(s).

7) A method of predicting response of a tumor subject to drug(s), said method comprising acts of:
a. culturing the subject's tumor tissue on tumor microenvironment platform as claimed in claim 3, to obtain cultured tumor tissue;
b. treating the cultured tumor tissue with the drug(s);
c. assessing tumor response to the drug by plurality of assays to obtain assessment score for each of the plurality of assays;
d. assigning a weightage score for each of the plurality of assays;
e. multiplying the assessment score of each of the plurality of assays with weightage score of corresponding assay of the plurality of assays to obtain independent assay score for each of the plurality of assays;
e. combining the independent assay score of each of the plurality of assays to obtain sensitivity index and thereby predicting the response of the subject to the drug(s); and
f. optionally, correlating the sensitivity index with clinical response of the subject to the drug(s).

8) A method of screening or developing anti-cancer agent, said method comprising acts of:
a. culturing subject's tumor tissue on tumor microenvironment platform as claimed in claim 3, to obtain cultured tumor tissue;
b. treating the cultured tumor tissue with the agent, assessing tumor response to the agent by assay to determine effect of said agent on the tumor cell.

9) A method for screening tumor cells for specific markers, said method comprising act of:
a. culturing subject's tumor tissue on tumor microenvironment platform as claimed in claim 3, to obtain cultured tumor tissue;
b. treating the cultured tumor tissue with drug(s) and assessing tumor response to the drug by assay; and
c. conducting microarray and Nucleic Acid analysis to screen for the biomarkers.

10) The Extra Cellular Matrix [ECM] composition as claimed in claim 1, the tumor microenvironment platform as claimed in claim 3, and the methods as claimed in claims 2, 4 to 11, wherein the Extra Cellular Matrix [ECM] composition is tumor specific.

11) The Extra Cellular Matrix [ECM] composition as claimed in claim 1, the tumor microenvironment platform as claimed in claim 3 and the methods as claimed in claims 2, 4 to 9, wherein the collagen 1 is at concentration ranging from about 0.01 μg/ml to about 100 μg/ml, preferably at about 5 μg/ml or about 20 μg/ml or about 50 μg/ml; the collagen 3 is at concentration ranging from about 0.01 μg/ml to about 100 μg/ml, preferably at about 0.1 μg/ml or about 1 μg/ml or about 100 μg/ml; the collagen 4 is at concentration ranging from about 0.01 μg/ml to about 500 μg/ml, preferably at about 5 μg/ml or about 20 μg/ml or about 250 μg/ml; the collagen 6 is at concentration ranging from about 0.01 μg/ml to about 500 μg/ml, preferably at about 0.1 μg/ml or about 1 μg/ml or about 10 μg/ml; the Fibronectin is at concentration ranging from about 0.01 μg/ml to about 750 μg/ml, preferably at about 5 μg/ml or about 20 μg/ml or about 500 μg/ml; the Vitronectin is at concentration ranging from about 0.01 μg/ml to about 95 μg/ml, preferably at about 5 μg/ml or about 10 μg/ml; the Cadherin is at concentration ranging from about 0.01 μg/ml to about 500 μg/ml, preferably at about 1 μg/ml and about 5 μg/ml; the Filamin A is at concentration ranging from about 0.01 μg/ml to about 500 μg/ml, preferably at about 5 μg/ml or about 10 μg/ml; the Vimentin is at concentration ranging from about 0.01 μg/ml to about 100 μg/ml, preferably at about 1 μg/ml or about 10 μg/ml; the Laminin is at concentration ranging from about 0.01 μg/ml to about 100 μg/ml, preferably at about 5 μg/ml or about 10 μg/ml or about 20 μg/ml; the Decorin is at concentration ranging from about 0.01 μg/ml to about 100 μg/ml, preferably at about 10 μg/ml or about 20 μg/ml; the Tenascin C is at concentration ranging from about 0.01 μg/ml to about 500 μg/ml, preferably at about 10 μg/ml or about 25 μg/ml; the Osteopontin is at concentration ranging from about 0.01 μg/ml to about 150 μg/ml, preferably at about 1 μg/ml or about 5 μg/ml; the Basement membrane protein, the Cytoskeletal protein and the Matrix protein are at concentration ranging from about 0.01 μg/ml to about 150 μg/ml.

12) The tumor microenvironment as claimed in claim 3 and methods as claimed in claims 2, 4 to 9, wherein said tumor tissue is obtained from source selected from group comprising

central nervous system, bone marrow, blood, spleen, thymus, heart, mammary gland, liver, pancreas, thyroid, skeletal muscle, kidney, lung, intestine, stomach, oesophagus, ovary, bladder, testis, uterus, stromal tissue and connective tissue or any combinations thereof.

13) The tumor microenvironment as claimed in claim 3 and the methods as claimed in claims 2, 4 to 9, wherein the tumor or the tumor tissue is obtained surgically or by biopsy or as xenograft or any combinations thereof; and the tumor or the tumor tissue is divided into small pieces of about 100 μm to about 3000 μm sections.

14) The tumor microenvironment as claimed in claim 3 and the methods as claimed in claims 4 to 9, wherein the culturing of the tumor tissue is carried out at temperature ranging from about 30°C to about 40°C, preferably about 37°C; for time duration of about 2 to 10 days, preferably about 3 to 7 days; and about 5% CO_2.

15) The tumor microenvironment as claimed in claim 3 and the methods as claimed in claims 4 to 9, wherein the tumor microenvironment platform is selected from group comprising plate, base, flask, dish, petriplate and petridish.

16) The tumor microenvironment platform as claimed in claim 3 and the method as claimed in claim 4, wherein said platform is for maintaining signaling networks of tumor cell.

17) The tumor microenvironment platform as claimed in claim 3 and the method as claimed in claim 4, wherein said platform is for maintaining an intact tissue micro-environment, cellular architecture and integrity of tumor–stroma interaction.

18) The tumor microenvironment as claimed in claim 3 and the methods as claimed in claims 4 to 9, wherein the culture medium is selected from group comprising Dulbecco's Modified Eagle Medium [DMEM] or RPMI1640 [Roswell Park Memorial Institute Medium] at concentration ranging from about 60% to about 100%, preferably about 80% 2ml; heat inactivated Foetal Bovine Serum (FBS) at concentration ranging from about 0.1% to about 40%, preferably about 2% wt/wt; Penicillin-Streptomycin at concentration ranging from about 1% to about 2%, preferably about 1% wt/wt; sodium pyruvate at

concentration ranging from about 10mM to about 500mM, preferably about 100mM; nonessential amino acid is L-glutamine at concentration ranging from about 1mM to about 10mM, preferably about 5mM; and HEPES ((4-(2-hydroxyethyl)-1-piperazineethanesulfonic acid) at concentration ranging from about 1mM to about 20mM, preferably about 10mM; the serum, is at concentration ranging from about 0.1% to about 10%, preferably about 2%.

19) The methods as claimed in claims 4 to 9, wherein the coating is tumor specific and tumor is selected from group comprising stomach, colon, head & neck, brain, oral cavity, breast, gastric, gastro-intestinal, oesophageal, colorectal, pancreatic, lung, liver, kidney, ovarian, uterine, bone, prostate, testicular, glioblastoma, astrocytoma, melanoma, thyroid, bladder, non-small cell lung, small cell lung, haemotological cancers including AML [Acute Myeloid Leukemia], CML [Chronic Myelogenous Leukemia], ALL [Acute Lymphocytic Leukemia], TALL [T-cell Acute Lymphoblastic Leukemia], NHL [Non-Hodgkins Lymphoma], DBCL [Diffuse B-cell Lymphoma], CLL [Chronic Lymphocytic Leukemia] and multiple myeloma or any combinations thereof.

20) The methods as claimed in claims 6 to 9, wherein the assay is selected from group comprising assay for cell viability, cell death, cell proliferation, tumor morphology, tumor stroma content, cell metabolism, senescence or any combinations thereof.

21) The method as claimed in claim 20, wherein the assay for the cell viability and the cell metabolism is selected from group comprising WST assay, ATP uptake assay and glucose uptake assay; the assay for the cell death is selected from group comprising LDH assay, Activated Caspase 3 assay, Activated Caspase 8 assay and Nitric Oxide Synthase assay, TUNEL; the assay for the cell proliferation is selected from group comprising Ki67 assay, ATP/ADP ratio assay and glucose uptake assay; and the assay for the tumor morphology and the tumor stroma is H&E [Haemaotxylin & Eosin staining]; or any combinations thereof.

22) The methods as claimed in claims 6 and 7, wherein the method is used for deciding treatment for the subject from group comprising chemotherapy, targeted therapy, surgery, radiation or any combinations thereof.

23) The method as claimed in claim 2, wherein the biochemical assay is quantitative assay or qualitative assay selected from group comprising ELISA, blotting technique, LCMS, bead based assay, immuno depletion, chromatographic assay or any combinations thereof.

24) The method as claimed in claim 7, wherein the assigning a weightage score for each of the plurality of assays is based on nature of the drug used.

25) The methods as claimed in claims 6 and 7, wherein the sensitivity index correlates to complete clinical response, partial clinical response and no clinical response when the sensitivity index is greater than 60, between 20 to 60 and less than 20 respectively.

26) The method as claimed in claim 9, wherein the microarray and the Nucleic Acid analysis of DNA, RNA or micro RNA is carried out to detect pathway modulation before and after the drug treatment.

27) The method as claimed in claim 26, wherein the microarray and the Nucleic Acid analysis is confirmed using assay selected from group comprising Real-time PCR (RTPCR), Immunohistochemical (IHC) analysis and phospho-proteomic profiling.

We Claim:

1) An Extra Cellular Matrix [ECM] composition comprising components - collagen 1, collagen 3, collagen 4, collagen 6, Fibronectin, Vitronectin, Cadherin, Filamin A, Vimentin, Osteopontin, optionally along with Laminin, Decorin, Tenascin C, Basement membrane proteins, Cytoskeletal proteins and Matrix proteins.

2) A method to obtain Extra Cellular Matrix [ECM] composition as claimed in claim 1, said method comprises acts of:
   a. subjecting tumor tissue to biochemical assay to identify components of the ECM; and
   b. combining the components of the ECM - collagen 1, collagen 3, collagen 4, collagen 6, Fibronectin, VitroNectin , Cadherin, FilaminA, Vimentin, Osteopontin, optionally along with Laminin, Decorin, Tenascin C, Basement membrane protein, Cytoskeletal protein and Matrix protein to obtain the ECM composition.

3) A tumor microenvironment platform for culturing tumor tissue, said microenvironment comprising the ECM composition as claimed in claim 1, culture medium optionally alongwith serum, plasma or PBMCs and drug.

4) A method for obtaining tumor microenvironment platform for culturing tumor tissue, said method comprising act of coating platform with ECM composition as claimed in claim 1 and adding culture medium optionally alongwith serum, plasma or PBMCs and drug, to the platform to obtain the tumor microenvironment platform.

5) A method of organotypic culturing of tumor tissue, said method comprising act of culturing the tumor tissue on tumor microenvironment platform as claimed in claim 3 to obtain the organotypic culture.

6) A method of predicting response of a tumor subject to drug(s), said method comprising acts of:
   a. culturing the subject's tumor tissue on tumor microenvironment platform as claimed in claim 3, to obtain cultured tumor tissue;
   b. treating the cultured tumor tissue with the drug(s) and conducting assay;

c. converting the assay's readout into numeric metric to obtain sensitivity index and thereby, predicting the response of the subject to the drug(s); and

d. optionally, correlating the sensitivity index to clinical response of the subject to the drug(s).

7) A method of predicting response of a tumor subject to drug(s), said method comprising acts of:

a. culturing the subject's tumor tissue on tumor microenvironment platform as claimed in claim 3, to obtain cultured tumor tissue;

b. treating the cultured tumor tissue with the drug(s);

c. assessing tumor response to the drug by plurality of assays to obtain assessment score for each of the plurality of assays;

d. assigning a weightage score for each of the plurality of assays;

e. multiplying the assessment score of each of the plurality of assays with weightage score of corresponding assay of the plurality of assays to obtain independent assay score for each of the plurality of assays;

f. combining the independent assay score of each of the plurality of assays to obtain sensitivity index and thereby predicting the response of the subject to the drug(s); and

g. optionally, correlating the sensitivity index with clinical response of the subject to the drug(s).

8) A method of screening or developing anti-cancer agent, said method comprising acts of:

a. culturing subject's tumor tissue on tumor microenvironment platform as claimed in claim 3, to obtain cultured tumor tissue; and

b. treating the cultured tumor tissue with the agent, assessing tumor response to the agent by assay to determine effect of said agent on the tumor cell.

9) A method for screening tumor cells for specific markers, said method comprising act of:

a. culturing subject's tumor tissue on tumor microenvironment platform as claimed in claim 3, to obtain cultured tumor tissue;

b. treating the cultured tumor tissue with drug(s) and assessing tumor response to the drug by assay; and

c. conducting microarray and Nucleic Acid analysis to screen for the biomarkers.

10) The Extra Cellular Matrix [ECM] composition as claimed in claim 1, the tumor microenvironment platform as claimed in claim 3, and the methods as claimed in claims 2, 4 to 9, wherein the Extra Cellular Matrix [ECM] composition is tumor specific; and wherein the collagen 1 is at concentration ranging from about 0.01 µg/ml to about 100 µg/ml, preferably at about 5 µg/ml or about 20 µg/ml or about 50 µg/ml; the collagen 3 is at concentration ranging from about 0.01 µg/ml to about 100 µg/ml, preferably at about 0.1 µg/ml or about 1 µg/ml or about 100 µg/ml; the collagen 4 is at concentration ranging from about 0.01 µg/ml to about 500 µg/ml, preferably at about 5 µg/ml or about 20 µg/ml or about 250 µg/ml; the collagen 6 is at concentration ranging from about 0.01 µg/ml to about 500 µg/ml, preferably at about 0.1 µg/ml or about 1 µg/ml or about 10 µg/ml; the Fibronectin is at concentration ranging from about 0.01 µg/ml to about 750 µg/ml, preferably at about 5 µg/ml or about 20 µg/ml or about 500 µg/ml; the Vitronectin is at concentration ranging from about 0.01 µg/ml to about 95 µg/ml, preferably at about 5 µg/ml or about 10 µg/ml; the Cadherin is at concentration ranging from about 0.01 µg/ml to about 500 µg/ml, preferably at about 1 µg/ml and about 5 µg/ml; the Filamin A is at concentration ranging from about 0.01 µg/ml to about 500 µg/ml, preferably at about 5 µg/ml or about 10 µg/ml; the Vimentin is at concentration ranging from about 0.01 µg/ml to about 100 µg/ml, preferably at about 1 µg/ml or about 10 µg/ml; the Laminin is at concentration ranging from about 0.01 µg/ml to about 100 µg/ml, preferably at about 5 µg/ml or about 10 µg/ml or about 20 µg/ml; the Decorin is at concentration ranging from about 0.01 µg/ml to about 100 µg/ml, preferably at about 10 µg/ml or about 20 µg/ml; the Tenascin C is at concentration ranging from about 0.01 µg/ml to about 500 µg/ml, preferably at about 10 µg/ml or about 25 µg/ml; the Osteopontin is at concentration ranging from about 0.01 µg/ml to about 150 µg/ml, preferably at about 1 µg/ml or about 5 µg/ml; the Basement membrane protein, the Cytoskeletal protein and the Matrix protein are at concentration ranging from about 0.01 µg/ml to about 150 µg/ml.

11) The tumor microenvironment as claimed in claim 3 and methods as claimed in claims 2, 4 to 9, wherein said tumor tissue is obtained from source selected from group comprising central nervous system, bone marrow, blood, spleen, thymus, heart, mammary gland, liver, pancreas, thyroid, skeletal muscle, kidney, lung, intestine, stomach, oesophagus, ovary, bladder, testis, uterus, stromal tissue and connective tissue or any combinations

thereof; and wherein the tumor or the tumor tissue is obtained surgically or by biopsy or as xenograft or any combinations thereof; and the tumor or the tumor tissue is divided into small pieces of about 100 μm to about 3000 μm sections.

12) The tumor microenvironment as claimed in claim 3 and the methods as claimed in claims 4 to 9, wherein the culturing of the tumor tissue is carried out at temperature ranging from about 30°C to about 40°C, preferably about 37°C; for time duration of about 2 to 10 days, preferably about 3 to 7 days; and about 5% CO_2; and wherein the coating platform is selected from group comprising plate, base, flask, dish, petriplate and petridish.

13) The tumor microenvironment platform as claimed in claim 3 and the method as claimed in claim 4, wherein said microenvironment platform is for maintaining signaling networks of tumor cell, maintaining an intact tissue micro-environment, cellular architecture and integrity of tumor stroma interaction.

14) The tumor microenvironment as claimed in claim 3 and the methods as claimed in claims 4 to 9, wherein the culture medium is selected from group comprising Dulbecco's Modified Eagle Medium [DMEM] or RPMI1640 [Roswell Park Memorial Institute Medium] at concentration ranging from about 60% to about 100%, preferably about 80% 2ml; heat inactivated Foetal Bovine Serum (FBS) at concentration ranging from about 0.1% to about 40%, preferably about 2% wt/wt; Penicillin-Streptomycin at concentration ranging from about 1% to about 2%, preferably about 1% wt/wt; sodium pyruvate at concentration ranging from about 10mM to about 500mM, preferably about 100mM; nonessential amino acid is L-glutamine at concentration ranging from about 1mM to about 10mM, preferably about 5mM; and HEPES ((4-(2-hydroxyethyl)-1-piperazineethanesulfonic acid) at concentration ranging from about 1mM to about 20mM, preferably about 10mM or any combination thereof; and the serum in the culture medium is at concentration ranging from about 0.1% to about 10%, preferably about 2%.

15) The methods as claimed in claims 2, 4 to 9, wherein the tumor is selected from group comprising stomach, colon, head & neck, brain, oral cavity, breast, gastric, gastro-intestinal, oesophageal, colorectal, pancreatic, lung, liver, kidney, ovarian, uterine, bone, prostate, testicular, glioblastoma, astrocytoma, melanoma, thyroid, bladder, non-small

cell lung, small cell lung, haemotological cancers including AML [Acute Myeloid Leukemia], CML [Chronic Myelogenous Leukemia], ALL [Acute Lymphocytic Leukemia], TALL [T-cell Acute Lymphoblastic Leukemia], NHL [Non-Hodgkins Lymphoma], DBCL [Diffuse B-cell Lymphoma], CLL [Chronic Lymphocytic Leukemia] and multiple myeloma or any combinations thereof.

16) The methods as claimed in claims 6 to 9, wherein the assay is selected from group comprising assay for cell viability, cell death, cell proliferation, tumor morphology, tumor stroma content, cell metabolism, senescence or any combinations thereof; and wherein the assay for the cell viability and the cell metabolism is selected from group comprising WST assay, ATP uptake assay and glucose uptake assay; the assay for the cell death is selected from group comprising LDH assay, Activated Caspase 3 assay, Activated Caspase 8 assay and Nitric Oxide Synthase assay, TUNEL; the assay for the cell proliferation is selected from group comprising Ki67 assay, ATP/ADP ratio assay and glucose uptake assay; and the assay for the tumor morphology and the tumor stroma is H&E [Haemaotxylin & Eosin staining]; or any combinations thereof.

17) The methods as claimed in claims 6 and 7, wherein the method is used for deciding treatment for the subject from group comprising chemotherapy, targeted therapy, surgery, radiation or any combinations thereof; and wherein the sensitivity index correlates to complete clinical response, partial clinical response and no clinical response when the sensitivity index is greater than 60, between 20 to 60 and less than 20 respectively.

18) The method as claimed in claim 2, wherein the biochemical assay is quantitative assay or qualitative assay selected from group comprising ELISA, blotting technique, LCMS, bead based assay, immuno depletion, chromatographic assay or any combinations thereof.

19) The method as claimed in claim 7, wherein the assigning a weightage score for each of the plurality of assays is based on nature of the drug used.

20) The method as claimed in claim 9, wherein the microarray and the Nucleic Acid analysis of DNA, RNA or micro RNA is carried out to detect pathway modulation before and after the drug treatment; and wherein the microarray and the Nucleic Acid analysis is

confirmed using assay selected from group comprising Real-time PCR (RTPCR), Immunohistochemical (IHC) analysis and phospho-proteomic profiling.