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Attachments included: No

Biomarker	Suggested website label	Description	Cancer type	Yes/No
CDKN2A	Cyclin-dependent kinase inhibitor 2A (CDKN2A)	Cyclin-dependent kinase inhibitor 2A (*CDKN2A*) is a gene that makes several proteins, including p16 and p14arf. These two proteins suppress tumours, so mutations in the *CDKN2A* gene can lead to the development of cancers (e.g. melanoma and pancreatic cancer).		**No**
Ki67	Antigen Ki67	Antigen Ki67 is a protein that plays a key role in cell proliferation. Ki67 is used as a marker to assess the rate at which cancer cells divide and form new cells. High levels of Ki67 are often correlated with a poor prognosis.	Breast, Lung, Haem	**Yes (MIBI)**
P53	P53	P53 is a protein that suppresses tumours and stops normal cells turning into cancerous cells via numerous methods. The *TP53* gene that controls the P53 protein is the most frequently mutated gene in human cancers.	Lung, Haem, Myeloma	**Yes**

RB	Retinoblastoma protein (RB)	Retinoblastoma protein (RB) is a protein that suppresses tumours and stops excessive cell growth. It has been shown not to work properly in several types of cancers.		**No**
ATIC	ATIC	This gene encodes a protein that catalyzes the final two steps of the pathway responsible for purine synthesis. Genetic translocation involving this gene can result in the formation of an ATIC-ALK fusion protein, seen in cases of anaplasti large cell lymphoma (ALCL).	Haem (NHL)	**No**
BCL2	BCL2	The *BCL2* gene encodes a transmembrane protein in mitochondria that inhibtis apoptosis in lymphocyes. Genetic translocations, such as to the immunoglobulin heavy chain locus, can cause constitutive expression of the BCL2 protein and are thought to be the cause of follicular lymphoma.	Haem (NHL, HL)	**Yes**
BCL6	BCL6	*BCL6* encodes a zinc finger transcription factor that represses transcription. Genetic hypermutations and translocations in this gene are associated with diffuse large cell lymphomas (DLCL). This protein may also be associated with the way DLCL develops.	Haem (NHL)	**Yes**
BCL9	BCL9	The function of BCL9 is unknown, however, expression of this protein is associated with B-cell	Haem (NHL)	**No**

		malignancies including lymphomas.		
CCND2	CCND2	The *CCND2* gene encodes the protein Cyclin D2 which regulates the kinases CDK4 or CDK6 required for cell cycle G1 to S phase transition. Cyclin D3 has also been shown to phosphorylate the tumor supressor protein Rb. Rearrangemnts in the *CCDN2* gene are the most frequent in Cyclin D1 negative mantle cell lymphoma.	Haem (NHL)	**No**
CCND3	CCND3	The *CCND3* gene encodes the protein Cyclin D3 which regulates the kinases CDK4 or CDK6 required for ell cycle G1 to S phase transition. Cyclin D3 has also been shown to phosphorylate the tumor supressor protein Rb. Oncogenic mutations in the *CCND3* gene have been shown to generate highly stable Cyclin D3 proteins that can strongly drive cell cycle progression. This biomarker is used to help diagnose non-Hodgkin lymphoma.	Haem (NHL)	**No**
EIF4A2	EIF4A2	This gene encodes a protein involved in the intiation of protein translation. The translocation of *EFI4A2* with the *BCL6* gene has been observed in cases of follicular lymphoma and may indicate	Haem (NHL)	**No**

		transformation into a more aggressive form of the disease.		
IDO1	IDO1	This gene encodes a protein responsible for the rate-limiting step in tryptophan catabolsim. The IDO protein is associated with suppressing immune responses and facilitating immunological tolerance. IDO expression is associated with several hematological malignancies including lymphoma.	Haem (NHL)	**No**
MUC1	MUC1	The MUC1 protein regulates tissue metabolism and gene expression, including inhibition of tumor suppressor genes. The MUC1 gene has been shown to be amplified or rearranged in some cases of B-cell lymphomas.	Haem (NHL)	**No**
NPM1	nucleophosmin (NPM1)	Nucleophosmin is a posphoprotein found within cells that is thought to regulate the ARF-p53 tumor suppressor pathway. Translocation with the gene that encodes ALK can generate an unusual protein present in some blood cancers.	Haem (NHL, AML)	**Yes**
PCSK7	PCSK7	This gene is involved with the gene expression of "house keeping" proteins, however, unusual	Haem (NHL)	**No**

		translocations of this gene are associated with B-cell lymphomas.		
PTPN1	PTPN1	*PTPN1* gene encodes a protein that is a member of the protein tyrosine phosphatase family known to regulate cell growth, differentiation, mitotic cycle, and oncogenic transformation. Mutations in the *PTPN1* gene have been associated with increased phosphorylation of proteins in the JAK/STAT pathway and are implicated to drive lymphomagenesis.	Haem (NHL)	**No**
PTPRJ	PTPRJ	*PTPRJ* gene encodes a protein that is a member of the protein tyrosine phosphatase family known to regulate cell growth, differentiation, mitotic cycle, and oncogenic transformation. PTPRJ has been found to be expressed in a large number of lymphoma cases.	Haem (NHL)	**No**
PTPRK	PTPRK	*PTPRK* gene encodes a protein that is a member of the protein tyrosine phosphatase family known to regulate cell growth, differentiation, mitotic cycle, and oncogenic transformation. PTPRK has been identified as the major tumor suppressor gene that is commonly deleted in cases of primary central nervous system lymphomas.	Haem (NHL)	**No**

RHOH	RHOH	The RHOH gene encodes a protein that is a member of the RAS family and is expressed in hematopoietic stem cells. This protein functions as a negative regulator of cell proliferation and survival, and genetic mutations or translocations are associated with different leukemias and lymphomas. Translocations with BCL6 have been identified in non-Hodgkins lymphoma.	Haem (NHL)	**No**
RXRB	RXRB	The RXRB gene encodes a protein that is a member of the retinoid X receptor family, and heterodimerizes with other receptors to modulate gene expression. Single nuclotide polymorphisms within this gene have been associated with certain sub-types of lymphoma.	Haem (NHL)	**No**
SH2D1A	SH2D1A	This protein has been shown to play a major role in T and B-cell signaling, and mutations within this gene have been associated with malignant lymphomas.	Haem (NHL)	**No**
Tumor necrosis factor superfamily, member 8 (TNFRSF8), also known as CD30	TNFRSF8	The TNFRSF8 receptor is expressed by activated T cells and can mediate signal transduction that leads to NF-kappaB activation. This receptor has been demonstrated to positively regulate	Haem (NHL)	**Yes**

		apoptosis. Overexpression of TNFRSF8 on the cell surface can define a number of lymphoproliferative disorders including primary cutaneous anaplastic large-cell lymphoma.		
Tumor necrosis factor-alpha (TNF-α)	TNF-α	TNF-α is a proinflammatory cytokine that is integral to the disease course of rheumatoid arthritis. Gene variants have been identified that may increase the risk of non-Hodgkins lymphoma.	Haem (NHL)	**No**
Tumor necrosis factor-beta (TNF-β)	TNF-β	TNF-β is a cytokine produced by lymphocytes and is inolved in many immune responses as well as apoptosis. Genetic mutations in this gene are associated with non-Hodgkin's lymphoma among other diseases.	Haem (NHL)	**No**
TSPYL2	TSPYL2	The *TSPYL2* gene encodes a protein localized to the nucleolus and is involved in chromatin remodeling to negatively regulate cell-cycle progression. Cases of genetic translocation with the ALK gene have been demonstrated in diffuse large B-cell lymphoma.	Haem (NHL)	**No**

AKR1C1	AKR1C1	This gene encodes an enzyme that catalyzes the breakdown of progesterone to the inactive form 20-alpha-hydroxy-progesterone. Certain genetic variants are associated with an increase in oxidative species and therefore an increase in risk for certain subtypes of lymphoma.	Haem (NHL)	**No**
CXCR5	CXCR5	The *CXCR5* gene encodes the CXCR5 chemokine receptor involved in T-cell migration as well as signaling B cells into the B-cell zones of secondary lymphoid organs. CXCR5 is specifically expressed in Burkitt's lymphoma. Polymorphisms of CXCR5 may also be related to risk and prognoses of certain suptypes of lymphoma.	Haem (NHL)	**No**
CYBA	CYBA	The *CYBA* gene plays an important role in processes within the cell. Certain genetic variations may be associated with an increased risk in non-Hodgkins lymphoma subtypes or how the disease progresses.	Haem (NHL)	**No**

FCGR2A	FCGR2A	*FCGR2A* encodes the cell surface receptor present on several different immune cells that binds the Fc portion of the immunoglobulin class IgG_2. It has been thought that single nucleotide polymorphisms in this gene can lead to alterations in affinity of the receptor for monoclonal antibody-based therapies such as rituximab and therefore impact patient outcomes. Additionally, mutations in this gene can make patients more susceptible to recurrent infections.	Haem (NHL)	**No**
FCGR3A	FCGR3A	*FCGR3A* encodes the cell surface receptor present on several different immune cells that can bind the Fc portion of the immunoglobulin class IgG_3. Single nucleotide polymorphisms in this gene may lead to alterations in affinity of the receptor for monoclonal antibody-based therapies such as rituximab, and this could impact patient outcomes. Additionally, mutations in this gene can make patients more likely to have repeat infections.	Haem (NHL)	**No**
IGH	IGH	Analysis of the *IGH* gene is a common diagnostic to detect B-cell malignacies such as lymphoma, as the IGH gene has undergone	Haem (NHL)	**No**

		rearrangement even in precursor lymphoblasts and therefore can be detected as malignant clones expand.		
IGL	Immunoglobulin lamda locus	The *IGL* gene encodes the lamda class of the heavy chain domain of an immunoglobulin or antibody. Antibodies can recognize foreign antigens and mediate adaptive immune responses. Genetic translocationof the *IGL* gene are rare but can be found in certain kinds of lymphoma.	Haem (NHL)	**No**
IL12A	Interleukin 12A (IL12A)	The *IL12A* encodes the alpha subunit of the interleukin-12 cytokine that mediates important inflammatory responses in both innate and adaptive immunity. Genetic variants of the *IL12A* gene have been associated with an increased risk of certain lymphoma subtypes.	Haem (NHL, HL)	**No**
IL4	Interleukin 4	The *IL4* gene encodes a cytokine produced by T cells and mediates differentiation of T-helper cells. Increased levels of IL4 have been seen in certain subtypes of lymphoma and may make it easier for tumor cells to survive.	Haem (NHL)	**No**
SHMT1	SHMT1	This protein plays an important role in the metabolic folate pathway, and polymorphisms within this gene contribute to an increase risk of non-	Haem (NHL)	**No**

		Hodgkin's lymphoma.		
UCHL1	UCHL1	The *UCHL1* gene encodes a ubiquitin hydrolase and has been shown to be an oncogenic biomarker of aggressive germinal center diffuse large B-cell lymphoma.	Haem (NHL)	**No**
BCR-ABL1 fusion gene	BCR-ABL1	The BCR-ABL1 fusion gene, which results from a translocation between chromosomes 9 and 22, is a marker of CML and ALL. By finding out if its there, and how much of it there is, healthcare professionals can diagnose CML or ALL and determine how well a patient is responding to treatment.	Haem (CML, ALL)	**Yes**
Philadelphia chromosome	Philadelphia chromosome	The Philadelphia chromosome is produced by the translocation between chromosomes 9 and 22 and contains the BCR-ABL1 fusion gene. By finding out if its there, and how much of it there is, healthcare professionals can diagnose CML or ALL and determine how well a patient is responding to treatment.	Haem (CML, ALL)	**No**
Sokal score	Sokal score	A prognostic score used by healthcare professionals to guide treatment strategies. The Sokal score is based on a patient's age, spleen size, and the amount of certain	Haem (CML)	**No**

		types of blood cells before treatment.		
Hasford (EURO) score	Hasford (EURO) score	A prognostic score used by healthcare professionals to guide treatment strategies. The Hasford (EURO) score is based on a patient's age, spleen size, and the amount of certain types of blood cells before treatment.	Haem (CML)	**No**
European Treatment and Outcome Study (EUTOS) score	EUTOS score	A prognostic score used by healthcare professionals to guide treatment strategies. The EUTOS score is based on a patient's spleen size and the amount of a certain type of blood cell before treatment.	Haem (CML)	**No**
EUTOS Long-Term Survival (ELTS) score	ELTS score	A prognostic score used by healthcare professionals to guide treatment strategies. The ELTS score is based on a patient's age, spleen size, and the amount of certain types of blood cells before treatment.	Haem (CML)	**No**
Heparanase	Heparanase	Heparanase is a protein in the body that works to break down carbohydrates in the wall of certain cells, and may be a signal of the spreading of cancer to other organs.	Haem (HL)	**No**
VEGF	Vascular Endothelial Growth Factor (VEGF)	Vascular endothelial growth factor (VEGF) is a substance produced by cancer cells that can signal tumour growth and the spread of cancer to other organs	Haem (HL)	**No**

		in the body. Detection of VEGF may provide information about the possible long-term outlook for a patient with cancer.		
CD68+ cells	CD68+ Cells	Detection of increased levels of CD68+ might be helpful for determining the long-term outlook for a patient with Hodgkin lymphoma. However, results of CD163+ might provide more reliable information.	Haem (HL)	**Yes (CD68)**
CD163+ cells	CD163+ Cells	Detection of increased levels of CD163+ might be helpful for determining the long-term outlook for a patient with Hodgkin lymphoma, and may provide more reliable information than CD68+.	Haem (HL)	**Yes (CD163)**
CD83	CD83	CD83 is a protein that may be seen in high levels in patients with Hodgkin lymphoma. Detection of high levels of CD83 may be helpful for the diagnosis of Hodgkin lymphoma, may also be helpful for determining the long-term outlook for a patient with Hodgkin lymphoma.	Haem (HL)	**No**
PD-1/PD-L1	PD-1/PD-L1	PD-1 and PD-L1 are proteins that may be a signal cancer cells are present. Detection of high levels of PD-1 may be helpful for determining the long-term outlook for a patient with Hodgkin lymphoma. Detection of PD-L1 may provide	Haem (HL)	**Yes**

		information about a patient's long-term outlook, and their response to certain types of treatments.		
FOXP3	FOXP3	FOXP3 is a type of immune cell that may invade cancer cells to prevent further growth. Detection of increased levels of FOXP3 may be helpful for determining the long-term outlook for a patient with Hodgkin lymphoma.	Haem (HL)	**No**
CD21	CD21	Detection of very low levels of CD21 may be helpful for determining the long-term outlook for a patient with Hodgkin lymphoma.	Haem (HL)	**yes**
CD117	CD117	Detection of increased levels of CD117 might be helpful for determining the long-term outlook for a patient with Hodgkin lymphoma.	Haem (HL)	**yes**
LDH	Serum lactate dehydrogenase (LDH)	A prognostic marker for patients with Chronic Lymphocytic Leukaemia (CLL). Lactate dehydrogenase is an enzyme requred for turning sugar into energy in the body. High levels can be an indicator of tissue damage.	Haem (CLL)	**No**
CD23	CD23	A prognostic marker for patients with Chronic Lymphocytic Leukaemia (CLL). CD23 is a protein found on the surface of certain types of B cells.	Haem (CLL)	**yes**

Thymidine kinase	Thymidine kinase	A prognostic marker for patients with Chronic Lymphocytic Leukaemia (CLL). Can be used as a surrogate for IgHV mutation.	Haem (CLL)	**No**
Beta 2 microglobulin	Beta 2 microglobulin	A prognostic marker for patients with Chronic Lymphocytic Leukaemia (CLL) and Multiple Myeloma. Beta 2 microglobulin is a component of MHC class I molecules which are present on all nucleated cells (except for red blood cells).	Haem (CLL), Myeloma	**No**
Zeta associated protein (ZAP70)	ZAP70	A prognostic marker for patients with Chronic Lymphocytic Leukaemia (CLL). ZAP70 is a tyrosine kinase protein normally expressed near the surface membrane of T cells and natural killer cells.	Haem (CLL)	**No**
CD38	CD38	A prognostic marker for patients with Chronic Lymphocytic Leukaemia (CLL). CD38 is a glycoprotein found on the surface of many immune cells include CD4+, CD8+, B lymphocytes and natural killer cells.	Haem (CLL)	**Yes**
13q	13q	A prognostic marker for patients with Chronic Lymphocytic Leukaemia (CLL). Tends to respond better to alkylating agents (fludarabine and chlorambucil)	Haem (CLL)	**No**
11q- (ATM)	11q- (ATM)	A prognostic marker for patients with Chronic Lymphocytic Leukaemia (CLL). Typically occur as monoallelic loss with and without mutation of the remaining ATM allele.	Haem (CLL)	**No**

Trisomy 12	Trisomy 12	A prognostic marker for patients with Chronic Lymphocytic Leukaemia (CLL). This means the lymphocytes contain an extra chromosome 12.	Haem (CLL)	**No**
6q-	6q-	A prognostic marker for patients with Chronic Lymphocytic Leukaemia (CLL). Part of chromosome 6 is missing in the lymphocytes	Haem (CLL)	**No**
IgHV mutation analysis	IgHV mutation analysis	A prognostic marker for patients with Chronic Lymphocytic Leukaemia (CLL). IgHV is the immunoglobulin heavy chain variable region genes. In B-cell neoplastms, mutations of IgHV are associated with better responses to some treatments	Haem (CLL)	**No**
FLT3	FLT3-ITD, FLT3-TKD	FLT3 is a receptor tyrosine kinase that is expressed by immature hematopoietic cells. Mutations in FLT3 are found in roughly 30% of patients with AML. It is also found in some people with ALL. FLT3-ITD mutations are typically associated with poorer outcomes (depends on allelic ratio). The impact of FLT3-TKD mutations is still debated.	Haem (AML, ALL)	**Yes**
CEBPA	CEBPA	CEBPA is responsible for myeloid differentiation and hindering cellular growth. Biallelic mutations of CEBPA are associated with a more favourable outcome.	Haem (AML)	**No**

MLLT3-KMT2A t(9;11)(p22;q23)	MLLT3-KMT2A t(9;11)(p22;q23)	This fusion t(9;11)(p22;q23) results in a protein that disrupts normal maturation of hematopoietic cells. This fusion is associated with an intermediate prognosis.	Haem (AML, ALL)	**No**
RUNX1-RUNX1T1 t(8;21)	RUNX1-RUNX1T1 t(8;21)	This gene is affected by a genetic rearrangement known as translocation. The most common in AML is t(8;21) whereby RUNX1 gene on chromosome 21 fuses to RUNX1T1 on chromosome 8. This abnormailities is associated with a favourable prognosis.	Haem (AML)	**Yes**
CBFB-MYH11 inv(16); t(16;16)	CBFB-MYH11 inv(16); t(16;16)	This genetic rearrangement, an inversion, involves the fusion of CBFB and MYH11 (inv(16)) genes on chromosome 16. Less common is a translocation between these two genes t(16;16). The fusion prevents CBF from controlling gene activity and is associated with a favourable prognosis.	Haem (AML)	**Yes**
inv(3); t(3;3) RPN1/MECOM	inv(3); t(3;3) RPN1/MECOM	Inversions and translocations of these two genes are seen in roughly 1.4% and 1.6% of patients with AML. The prognosis in these patients is particularly poor.	Haem (AML)	**No**
RUNX1	RUNX1	This gene is associated with development of hematopoietic stem cells. These are 'immature' cells that will develop into	Haem (AML)	**No**

		different types of blood cell. Mutations in this gene are usually linked to a poor prognosis.		
ASXL1	ASXL1	Gain of function mutation results in poor regulation of gene activity and is associated with a poor prognosis.	Haem (AML)	**No**
KIT	KIT	KIT mutations are found in 46% of patients who have core binding factor leukemia (most frequently t(8;21) and inv(16)). Together this is associated with an intermediate prognosis in AML.	Haem (AML)	**No**
t(6;9)	t(6;9) DEK-CAN	Translocation in a gene named Cain is found mostly in young adult patients with AML. It is usually linked to a poor prognosis.	Haem (AML)	**No**
t(9;22)	t(9;22)	The formation of this fusion gene involves BCR-ABL protein and results in enhanced tyrosine kinase activity. This translocation is associated with poor prognosis.	Haem (AML)	**Yes**
monosomal karyotype	monosomal karyotype -5; -7	Loss of a single chromosome, most commonly chromosome 7 in AML. This is usually linked to a poor diagnosis.	Haem (AML)	**No**
CD138-selected bone marrow plasma cells	CD138	Decreased expression of CD138 is frequently observed in plasma cells of myeloma patients and relates to poor pronosis.	Myeloma	**Yes**

t(4;14)	t(4;14)	Multiple myeloma is characterized by a high occurrence of chromosomal aberrations. Cytogenetic abnormalities are detected by fluorescent in situ hybridization (FISH).	Myeloma	**No**
T(14;16)	T(14;16)	Multiple myeloma is characterized by a high occurrence of chromosomal aberrations. Cytogenetic abnormalities are detected by fluorescent in situ hybridization (FISH).	Myeloma	**No**
1q gain; 1q21 amplification	1q gain; 1q21 amplification	Multiple myeloma is characterized by a high occurrence of chromosomal aberrations. Cytogenetic abnormalities are detected by fluorescent in situ hybridization (FISH).	Myeloma	**No**
del(1p)	del(1p)	Multiple myeloma is characterized by a high occurrence of chromosomal aberrations. Cytogenetic abnormalities are detected by fluorescent in situ hybridization (FISH).	Myeloma	**Yes, but not in Myeloma**
ETV6-RUNX1 gene fusion	ETV6-RUNX1	A fusion gene forms when two separate genes are joined together. The presence of fusion genes can help determine which treatment is best for each patient. The ETV6-RUNX1 fusion gene, which results from a fusion of chromosomes	ALL	**No**

		12 and 21, is also known as "TEL/AML". The fusion gene promotes cancer development.		
ABL gene fusions	ABL	A fusion gene forms when two separate genes are joined together. The presence of fusion genes can help determine which treatment is best for each patient. Fusion genes involving the ABL gene are known to promote cancer development.	ALL	**No**
ABL2 gene fusions	ABL2	A fusion gene forms when two separate genes are joined together. The presence of fusion genes can help determine which treatment is best for each patient. Fusion genes involving the ABL2 gene are known to promote cancer development.	ALL	**No**
CRLF2 gene fusions	CRLF2	A fusion gene forms when two separate genes are joined together. The presence of fusion genes can help determine which treatment is best for each patient. Fusion genes involving the CRLF2 gene are known to promote cancer development.	ALL	**No**

CSF1R gene fusions	CSF1R	A fusion gene forms when two separate genes are joined together. The presence of fusion genes can help determine which treatment is best for each patient. Fusion genes involving the CSF1R gene are known to promote cancer development.	ALL	**No**
EPOR gene fusions	EPOR	A fusion gene forms when two separate genes are joined together. The presence of fusion genes can help determine which treatment is best for each patient. Fusion genes involving the EPOR gene are known to promote cancer development.	ALL	**No**
JAK2 gene fusions	JAK2	A fusion gene forms when two separate genes are joined together. The presence of fusion genes can help determine which treatment is best for each patient. Fusion genes involving the JAK2 gene are known to promote cancer development.	ALL	**No**
PDGFRB gene fusions	PDGFRB	A fusion gene forms when two separate genes are joined together. The presence of fusion genes can help determine which treatment is best for each patient. Fusion genes involving the PDGFRB gene are known to promote cancer development.	ALL	**No**

IL7R gene mutations	IL7R	A mutation is a permanent change in the DNA sequence that makes up a gene. Mutations in some genes are known to be associated with ALL. The presence of specific gene mutations can help determine which treatment is best for each patient. Mutations in IL7R are known to o activate cancer promoting pathways in blood cells.	ALL	**No**
SH2B3 gene mutations	SH2B3	A mutation is a permanent change in the DNA sequence that makes up a gene. The presence of specific gene mutations can help determine which treatment is best for each patient. SH2B3 is known to regulate the normal formation of blood cells and mutations in the gene are associated with ALL.	ALL	**No**
JAK1 gene mutations	JAK1	A mutation is a permanent change in the DNA sequence that makes up a gene. Mutations in some genes are known to be associated with ALL. The presence of specific gene mutations can help determine which treatment is best for each patient. Mutations in JAK1 are known to activate cancer promoting pathways in blood cells.	ALL	**Yes**

JAK2 gene mutations	JAK2	A mutation is a permanent change in the DNA sequence that makes up a gene. Mutations in some genes are known to be associated with ALL. The presence of specific gene mutations can help determine which treatment is best for each patient. Mutations in JAK2 are known to activate cancer promoting pathways in blood cells.	ALL	**No**
JAK3 gene mutations	JAK3	A mutation is a permanent change in the DNA sequence that makes up a gene. Mutations in some genes are known to be associated with ALL. The presence of specific gene mutations can help determine which treatment is best for each patient. Mutations in JAK3 are known to activate cancer promoting pathways in blood cells.	ALL	**No**

Diagnostic test	**Suggested website label**	**Description**	Cancer type	**Yes / No**
Abbott Molecular Inc, VYSIS ALK Break Apart FISH Probe Kit	Vysis LSI ALK break apart rearrangement probe kit	A diagnostic tool used to determine whether a change in the anaplastic lymphoma kinase (*ALK*) gene has occurred. Changes in the *ALK* gene in non-small cell lung cancer can lead to abnormal cell growth. Healthcare professionals can use this test to determine whether therapies that target ALK would be beneficial for patients.	Lung, Haem (NHL)	**No**
FindIt Panel Version 3.4	FindIT™	This test uses next generation sequencing to focus on 120 hotspots and 17 exons in 33 known cancer genes. The assay is performed on DNA that has been taken from tumour tissue. The results include a comprehensive report of histopathology (changes in the tissue) and sequencing results. In some case, the sequencing results will also include a match to locally approved treatments, a review of the literature, recommendations from the NCCN guidelines, and identification of relevant clinical	Haem (NHL)	**No**

		trials. This test is used to help diagnose non-Hodgkins Lymphoma.		
Invivoscribe, MYHEME™	MYHEME™	This sequencing analysis uses robust annotation software and a bioinformatics database and can detect somtatic mutations that are present in as low as 5% allelic frequency. The data reports sequences of mutations that facilitate temporal and longitudinal studies as well as analysis of minimial residual disease. This test is used to diagnose haematological cancers such as leukaemias and lymphomas.	Haem (leukemia/lymphomas)	**No**
Foundation Medicine, FoundationONE® Heme	FoundationONE® Heme	Is a comprehensive genetic profiling assay that sequences DNA and RNA across 250 genes to look for a wide range of gene fusions that often cause haematological cancers.	Haem	**No**

Asuragen, Quantide® X NGS Pan Cancer Kit	Quantide® X NGS Pan Cancer Kit	This assay offers multiplexed profiling of the most clinically relevant mutations and provides high performance in otherwise low quality samples.	Haem	**No**
Cepheid, Xpert® BCR-ABL Monitor	Xpert® BCR-ABL Monitor	A diagnostic tool used to determine the abundance of BCR-ABL1, a gene fusion that is a marker of chronic myeloid leukemia. By assessing its presence and level of abundance, healthcare professionals can diagnose CML and determine how well a patient is responding to treatment.	Haem (CML)	**No**
MolecularMD, MRDx® BCR-ABL Test	MRDx® BCR-ABL Test	A diagnostic tool used to determine the abundance of BCR-ABL1, a gene fusion that is a marker of chronic myeloid leukemia. By assessing its presence and level of abundance, healthcare professionals can diagnose CML and determine how well a patient is responding to treatment.	Haem (CML)	**No**
Asuragen, QuantideX® qPCR BCR-ABL IS Kit	QuantideX® qPCR BCR-ABL IS Kit	A diagnostic tool used to determine the abundance of BCR-ABL1, a gene fusion that is a marker of chronic myeloid leukemia. By assessing its	Haem (CML, ALL)	**No**

		presence and level of abundance, healthcare professionals can diagnose CML and determine how well a patient is responding to treatment.		
Bio-Rad, QXDx™ BCR-ABL %IS Kit	QXDx™ BCR-ABL %IS Kit	A diagnostic tool used to determine the abundance of BCR-ABL1, a gene fusion that is a marker of chronic myeloid leukemia. By assessing its presence and level of abundance, healthcare professionals can diagnose CML and determine how well a patient is responding to treatment.	Haem (CML)	**No**
QIAGEN, ipsogen BCR-ABL1 Mbcr RGQ RT-PCR Kit	ipsogen BCR-ABL1 Mbcr RGQ RT-PCR Kit	A diagnostic tool used to determine the abundance of BCR-ABL1, a gene fusion that is a marker of chronic myeloid leukemia. By assessing its presence and level of abundance, healthcare professionals can diagnose CML and determine how well a patient is responding to treatment.	Haem (CML)	**No**
EntroGen, BCR-ABL P210 (Mbcr) One-Step Detection Kit	BCR-ABL P210 (Mbcr) One-Step Detection Kit	A diagnostic tool used to determine the abundance of BCR-ABL1, a gene fusion that is a marker of chronic myeloid leukemia. By assessing its	Haem (CML)	**No**

		presence and level of abundance, healthcare professionals can diagnose CML and determine how well a patient is responding to treatment.		
QuanDx, Leukemia Fusion Genes (Q30) Screening Kit	Leukemia Fusion Genes (Q30) Screening Kit	A diagnostic tool used to screen for the presence of 30 different fusion genes associated with chronic myeloid leukemia, acute myeloid leukemia, or acute lymphoid leukemia.	Haem (CML, AML, ALL)	**No**
Panagene, PNAClamp™ Mutation Detection Kit BCR-ABL	PNAClamp™ Mutation Detection Kit BCR-ABL	A diagnostic tool used to identify the presence of the T315I variant of the BCR-ABL1 fusion gene, which confers resistance to many tyrosine kinase inhibitors. With this tool, healthcare professionals can identify the presence of the T315I variant and plan appropriate treatment strategies.	Haem (CML)	**No**
Bioneer, AccuPower® BCR-ABL Quantitative RT-PCR Kit	AccuPower® BCR-ABL Quantitative RT-PCR Kit	A diagnostic tool used to determine the abundance of BCR-ABL1, a gene fusion that is a marker of chronic myeloid leukemia. By assessing its presence and level of abundance, healthcare professionals can diagnose CML and determine how well a patient is	Haem (CML)	**No**

		responding to treatment.		
AB Analitica, REALQUALITY RQ-BCR-ABL p210 One-Step kit	REALQUALITY RQ-BCR-ABL p210 One-Step kit	A diagnostic tool used to determine the abundance of BCR-ABL1, a gene fusion that is a marker of chronic myeloid leukemia. By assessing its presence and level of abundance, healthcare professionals can diagnose CML and determine how well a patient is responding to treatment.	Haem (CML)	**No**
ELI Tech Group, BCR-ABL1 P210 ELITe MGB® Kit	BCR-ABL1 P210 ELITe MGB® Kit	A diagnostic tool used to determine the abundance of BCR-ABL1, a gene fusion that is a marker of chronic myeloid leukemia. By assessing its presence and level of abundance, healthcare professionals can diagnose CML and determine how well a patient is responding to treatment.	Haem (CML)	**No**
ThermoFisher Scientific, p53 Human ELISA Kit	p53 Human ELISA Kit	A diagnostic tool used to detect the presence of p53 in the body, which may signal the presence of cancerous cells.	Haem (HL, CLL)	**No**

ThermoFisher Scientific, BCL2 Human ELISA Kit	BCL2 Human ELISA Kit	A diagnostic tool used to detect the presence of BCL2 in the body. Detecting BCL2 can be used for diagnosis, and may help provide information about the possible long-term outlook for a patient with cancer.	Haem (HL)	**No**
EMD Millipore, Ki67 Proliferation Kit	Ki67 Proliferation Kit	A diagnostic tool used to detect the presence of Ki67 in the body. Results may help determine how fast a cancer may be growing, and provide information about the possible long-term outlook for a patient with cancer.	Haem (HL)	**No**
ThermoFisher Scientific, IL-10 Human ELISA Kit	IL-10 Human ELISA Kit	A diagnostic tool used to detect the presence of Interleukin (IL)-10 may be used for diagnosis, and may provide information about the possible long-term outlook for a patient with cancer.	Haem (HL)	**No**
ThermoFisher Scientific, IL-12 Human ELISA Kit	IL-12 Human ELISA Kit	A diagnostic tool used to detect the presence of Interleukin (IL)-12 may be used for diagnosis, and may provide information about the possible long-term outlook for a patient with cancer.	Haem (HL)	**No**

ThermoFisher Scientific, CD30 Human ELISA Kit	CD30 Human ELISA Kit	A diagnostic tool used to detect the presence of CD30 in the body, which may signal the presence of Hodgkins lymphoma. Detecting CD30+ can be used for diagnosis, and may provide information about the possible long-term outlook for a patient with cancer.	Haem (HL)	**No**
Abcam, Human ICAM1 ELISA Kit (CD54)	Human ICAM1 ELISA Kit (CD54)	A diagnostic tool used to detect the presence of Intercellular adhesion molecule-1 (ICAM-1, CD54), a protein that can be found in higher amounts in the presence of Hodgkin lymphoma cancer cells. Detecting ICAM-1 (CD-54) can be used for diagnosis, and may provide information about the possible long-term outlook for a patient with cancer.	Haem (HL)	**No**
Abcam, Human CD44 ELISA Kit	Human CD44 ELISA Kit	A diagnostic tool used to detect CD44, an important protein of Hodgkin lymphoma that helps cancer cells migrate in the body and invade other cells. Detecting CD44 can be used for diagnosis, and may provide information about the possible long-term outlook for a	Haem (HL)	**No**

		patient with cancer.		
ThermoFisher Scientific, Alpha-1-Antitrypsin Human ELISA Kit	AAT Human ELISA Kit	A diagnostic used tool to detect alpha-1-antitrypsin (AAT). In cancer, AAT may be a sign of tumour development, invasion of normal cells by cancer cells, and spreading of cancer to other organs.	Haem (HL)	**No**
Viracor/Eurofins Clinical Diagnostics, NK Cells Assay	Natural Killer Cell Function Assay	A diagnostic tool used to detect levels of Natural Killer (NK) cells in the body. If levels of NK is increased, your body may be working to remove cancer cells from the body.	Haem (HL)	**No**
Abbexa, Human Heparanase (HPA) ELISA Kit	HPA ELISA Kit	A diagnostic tool used to detect levels of heparanase in the body that may be a signal of the spreading of cancer to other organs.	Haem (HL)	**No**
Abcam, Human VEGF ELISA Kit	Human VEGF ELISA Kit	A diagnostic tool used to detect vascular endothelial growth factor (VEGF), a substance produced by cancer cells, that may signal the growth and spreading of cancer cells in the body. Detection of VEGF may provide information about the possible long-term outlook for a	Haem (HL)	**No**

		patient with cancer.		
Source BioScience, Human CD68 ELISA Kit	Human CD68 ELISA Kit	A diagnostic tool used to detect levels of CD68+. Detection of increased levels of CD68+ might be helpful for determining the long-term outlook for a patient with Hodgkin lymphoma. However, results of CD163+ might provide more reliable information.	Haem (HL)	**No**
Source BioScience, Human CD163 ELISA Kit	Human CD163 ELISA Kit	A diagnostic tool used to detect levels of CD163+. Detection of increased levels of CD163+ might be helpful for determining the long-term outlook for a patient with Hodgkin lymphoma, and may provide more reliable information than CD 68+.	Haem (HL)	**No**
Aviscera Bioscience, Soluble CD83 (Human) ELISA Kit	Soluble CD83 (Human) ELISA Kit	CD83 is a protein that may be seen in high levels in patients with Hodgkin lymphoma. Detection of high levels of CD83 may be helpful for the diagnosis of Hodgkin lymphoma, may also be helpful for determining the long-term outlook for a patient with	Haem (HL)	**No**

		Hodgkin lymphoma.		
ThermoFisher Scientific, PD-1 Human ELISA Kit	PD-1 Human ELISA Kit	PD-1 is a protein that may be a signal cancer cells are present. Detection of high levels of PD-1 may be helpful for determining the long-term outlook for a patient with Hodgkin lymphoma.	Haem (HL)	**No**
Abcam, Human PD-L1 ELISA Kit	Human PD-L1 ELISA Kit	PD-1 is a protein that may be a signal cancer cells are present. Detection of PD-L1 may provide information about a patient's long-term outlook, and their response to certain types of treatments.	Haem (HL)	**No**
(FOXP3) eBioscience™ Human Regulatory T Cell Whole Blood Staining Kit	eBioscience™ Human Regulatory T Cell Whole Blood Staining Kit	FOXP3 is a type of immune cell that may invade cancer cells to prevent further growth. Detection of increased levels of FOXP3 may be helpful for determining the long-term outlook for a patient with Hodgkin lymphoma.	Haem (HL)	**No**
Abcam, CD21 Human ELISA Kit	CD21 Human ELISA Kit	Detection of very low levels of CD21 may be helpful for determining the long-term outlook for a patient with Hodgkin lymphoma.	Haem (HL)	**No**
Abcam, c-Kit (CD117) Human ELISA Kit	c-Kit (CD117) Human ELISA Kit	Detection of increased levels of CD117 might be	Haem (HL)	**No**

		helpful for determining the long-term outlook for a patient with Hodgkin lymphoma.		
ThermoScientific AllSet+^{TM} Gold HLA Kit	AllSet+ HLA typing	Needed where an allogenic transplant may be an option. Human leukocyte antigen (HLA) typing is used to match patients and donors for bone marrow or cord blood transplants. HLA are proteins or markers found on most cells in the body. The immune system uses these markers to recognize which cells belong in your body and which do not	Haem (CLL)	**Yes**
Bio-Rad HLA Sequence Specific Primers (SSP) Kit	HLA SSP typing	Needed where an allogenic transplant may be an option. Human leukocyte antigen (HLA) typing is used to match patients and donors for bone marrow or cord blood transplants. HLA are proteins or markers found on most cells in the body. The immune system uses these markers to recognize which cells belong in your body and which do not	Haem (CLL)	**No**

ThermoScientific SeCore® HLA Sequence-Based Typing	SeCore HLA typing	Needed where an allogenic transplant may be an option. Human leukocyte antigen (HLA) typing is used to match patients and donors for bone marrow or cord blood transplants. HLA are proteins or markers found on most cells in the body. The immune system uses these markers to recognize which cells belong in your body and which do not	Haem (CLL)	**No**
ThermoFisher Scientific CMV ELISA kit	CMV serostatus	Needed if under consideration for alemtuzumab therapy. Use of alemtuzumab can suppress the immune system during treatment such that cytomegalovirus infections can reactivate. CMV should be monitoring during treatment and alemtuzumab treatment adjusted following treatment recommendations	Haem (CLL)	**No**
Serum protein electrophoresis	SPEP; Electrophoresis	This test can confim the presence of a paraprotein indicating possible myeloma or monoclonal gammopathy of undetermined significance (MGUS).	Myeloma	**Yes**
Serum-free light-chain assay	Light chain	Because the myeloma protein isn't always a whole antibody, doctors	Myeloma	**Yes**

		conduct the Free Light Chain Assay to measure a small part of the antibody known as the light chain.		
Serum immunofixation	Serum immunofixation	This test is used to confirm the presence of a paraprotein indicating possible myeloma or monoclonal gammopathy of undetermined significance (MGUS).	Myeloma	**No**
Arrow® OnControl® powered bone marrow biopsy system	Arrow® OnControl® Bone marrow biopsy	Confirms diagnosis of myeloma using morphology to determine plasma cell percentage and flow cytometry to determine plasma cell phenotype.	Myeloma	**No**
Quantitative immunoglobulins	Quantitative immunoglobulins	This test measures the blood levels of antibodies called immunoglobulins. The various immunoglobulins found in the blood include IgA, IgD, IgE, IgG, or IgM. Multiple myeloma patients may have high levels of one type of immunoglobulin as well as low levels of another type of immunoglobulin.	Myeloma	**Yes**
Bence-Jones Protein Urinalysis Test	Bence-Jones Protein Test	A test to measure the abnormal immunoglobulins, or M protein found in urine. Abnormal levels of certain proteins may indicate multiple myeloma.	Myeloma	**Yes**

Cytocell® Aquarius® Cytogenic Analysis (FISH)	Cytocell® Aquarius® FISH	Cytogenetic analysis is a technique that lets doctors analyze chromosomes in a patient's bone marrow cells. If doctors detect chromosome abnormalities, it may indicate multiple myeloma. Cytogenetic testing can take up to 3 weeks, as the cells must grow for a couple weeks before doctors can evaluate the chromosomes under a microscope.	Myeloma	**No**
Viapath® Cytogenic Analysis (FISH)	Viapath® FISH	Cytogenetic analysis is a technique that lets doctors analyze chromosomes in a patient's bone marrow cells. If doctors detect chromosome abnormalities, it may indicate multiple myeloma. Cytogenetic testing can take up to 3 weeks, as the cells must grow for a couple weeks before doctors can evaluate the chromosomes under a microscope.	Myeloma	**No**
Flow Cytometry	Flow Cytometry	Flow cytometry is a common myeloma test that can discover abnormal strands of DNA in bone marrow. Flow cytometry involves putting myeloma cells under a laser beam so that their DNA can be	Myeloma	**Yes**

		analyzed.		