

FLOW CYTOMETRY			
Test Description	Specimen Type	Preservative	Volume
Leukemia/Lymphoma/MDS Screening Panel	Bone Marrow/ Peripheral Blood,	Sodium Heparin (Green Top) Or EDTA (Lavender Top)	2-3 ml
T-LGL addon			
CLL addon			
NHL addon			
AML/ALL addon	Fluid	N/A	2 ml
Plasma Cell Malignancy	Fresh Tumor	RPMI	1-5 cm <sup>3</sup>
<b>High Sensitivity PNH</b>	<b>Peripheral Blood</b>	<b>EDTA</b>	<b>2 ml</b>

HISTOLOGY			
Test Description	Specimen Type	Preservative	Volume
Smear Morphology	Core Biopsy, Blood Clot, or Aspirate Slides	Formalin  Formalin  N/A	N/A  N/A  5 slides
Special Stains: Giemsa, Iron, PAS, Reticulin, Congo, Red, Trichrome, AFB, GMS			
Bone Marrow Workup (H&E, Special Stains: Giemsa, Iron, PAS, Reticulin)			
Immunohistochemistry: ALK1, Annexin A1, BCL1(CCND1), BCL2, BCL6, BOB.1, Calretinin, CD10, CD103, CD117, CD138, CD14, CD15, CD19, CD20, CD71, CD1a, CD2, CD21, CD25, CD3, CD30, CD34, CD38, CD4, CD43, CD45(LCA), CD5, CD56, CD61, CD68, CD79a, CD8, CDX2, CK20, CK5/6, CK903, C-Myc, Desmin, EBER, E-Cadherin, EGFR(del), EGFR(L858R), Fascin, GCDFFP-15, Glycophorin A, H.Pylori, HMB45, IgA, IgG, IgM, ISH, Kappa ISH, Ki-67, Lambda ISH, Lysozyme, MCT(Tryptase), Melan A, MPO, MUM1, Oct2, p16, p16, p40, p63, PAX-5, PAX-8, PCK(AE1/AE3), PSA, PSAP, S100, SMA, SOX-10, TdT, Vimentin, WT1			
	Core Biopsy, Blood Clot, FFPE Tissue (paraffin block), Positively charged slide	Formalin  Formalin  N/A	N/A  N/A  N/A

CYTOGENETICS - KARYOTYPING			
Test Description	Specimen Type	Preservative	Volume
Chromosome Analysis	Bone Marrow/ Peripheral Blood	Sodium Heparin – (Green Top)	2 ml

CYTOGENETICS- FLUORESCENCE IN-SITU HYBRIDIZATION (FISH)			
Disease State & Probes	Specimen Type	Preservative	Volume
<b>MDS:</b> EVI1, 5q, 7q,, ETV6, MLL, PML/RARA t(15;17), +19	Bone Marrow/ Peripheral Blood	Sodium Heparin (Green Top)  Or EDTA (Lavender Top)	2-3 ml
<b>AML:</b> RUNX1T1/RUNX1 t(8;21), PML/RARA t(15;17), MLL, CBFB			
<b>APL:</b> PML/RARA t(15;17)			
<b>MPN/Eosinophilia:</b> PDGFR $\alpha$ /CHIC-2/FIP1L, PDGFR $\beta$ , FGFR1, JAK2, BCR/ABL t(9;22), +19			
<b>CML:</b> BCR/ABL t(9;22)			
<b>Multiple Myeloma (MM):</b> 1p36/1q21, p53, +9, CCND1/IGH t(11;14), 13q14.3/13q34, MYC::IGH			
<b>CLL:</b> CCND1/IGH t(11;14), +12, 11q, p53, 13q14.3/13q34, MYC::IGH			
<b>MPN, P. Vera, ET, Eosinophilia. Neutropenia:</b> PDGFRA, PDGFRB, FGFR1, JAK2, BCR::ABL, 19			

**CYTOGENETICS- FLUORESCENCE IN-SITU HYBRIDIZATION (FISH) *Continued***

Disease State & Probes	Specimen Type	Preservative	Volume
<b>AML &amp; MDS:</b> RUNX1T1::RUNX1, MLL, PML::RARA, CBFB, 5q, 7q, Cep 8/MAFB, EVI1	Bone Marrow/ Peripheral Blood	Sodium Heparin (Green Top)  or  EDTA (Lavender Top)	2-3 ml
LPD: 7q, BCL6, IGH/BCL2 t(14;18), MYC/IGHt(8;14), CCND1/IGHt(11;14), BIRC3/MALT1 t(11;18)			
LPL: 5q, MYB (6q), CCND1/IGH t(11;14), MYC/IGH t(8;14), FGFR3/IGH t(4;14)			
<b>LPD, NHL, MZL, FL, MALT, Burkitt, MCL:</b> BCL6, 7q, MYC::IGH, CCND1::IGH, BIRC3::MALT1, IGH::BCL2, MLL			
T-Cell Lymphoma: 1p36/1q21, BCR/ABL t(9;22), +8, 20q, ETV6/RUNX1 t(12;21)			
ALL: 1p36/1q21, BCR/ABL t(9;22), MLL, ETV6/RUNX1 t(12;21), IGH rearrangement			

**MOLECULAR**

Test Description	Specimen Type	Preservative	Volume
IgVH	Bone Marrow/ Peripheral Blood	EDTA (Lavender Top)	BM: 3 ml PB: 4 ml
B-Cell Gene Rearrangement			
BCR/ABL1 (p.190, p.203, p.210, p.230) w/ABL mutation analysis (Quantitative)			
MYD88 with reflex to CXCR4			
T-Cell Gene Rearrangement	Bone Marrow/ Peripheral Blood	Sodium Heparin (Green Top)  or  EDTA (Lavender Top)	1-2 ml
HemeScreen® for Cytopenia (ASXL1, WT1, DNMT3A (Exon 23), SF3B1)			
HemeScreen® for AML (IDH1, IDH2, KIT, FLT3, NPM1, CEBPA)			
HemeScreen® for CLL (SF3B1, CXCR4, MYD88, NOTCH1)			
HemeScreen® for MPN (JAK2 Exons 12, 13, 14 (V617F), CALR, MPL)			

**NEXT GENERATION SEQUENCING (NGS)**

Test Description	Specimen Type	Preservative	Volume
NGS Hematologic Malignancies Panel	Bone Marrow/ Peripheral Blood	EDTA- (Lavender Top)	1-2 ml

**NGS GENES**

ABL1	BRAF	CEBPA*	ETV6*	HRAS
KDM6A*	NPM1	PTEM	SMC1A	TP53*
ANKRD26	CALR	CSF3R	EZH2*	IDH1
KIT	NRAS	PTPN11	SMC3	U2AF1
ASXL1	CBL	CUX1	FLT3	IDH2
KMT2A	PDGFRA	RAD21*	SRSF2	WT1
ATRX	CBLB	DDX41	GATA1	IKZF1*
KRAS	PHF6*	RUNX1*	STAG1	ZRSR2*
BCOR*	CBLC	DNMT3A*	GATA2*	JAK2
MPL	PIGA*	SETBP1	STAG2*	BCORL1*
CDKN2A*	ETNK1	GNAS	JAK3	NF1
PPM1D	SF3B1	TET2*		

\* Full CDS Coverage in genes indicated by