



Supp. Fig. S1 Chart of the markers (antibodies) for acute myeloid leukemia (AML) minimal residual disease (MRD) panel. Baso; basophils; MC, mast cells; mono, monocytic; Myelo, myeloid (granulocytic) lineage; NRBC, nucleated red blood cells; pDC, plasmacytoid dendritic cells; SC, stem cell (progenitor cells). Note: Asterisk symbols (*) indicate markers used for aberrancies of hematopoietic stem cells (also referred to as leukemic stem cells [LSCs]).

Supp. Table 1 AML MRD Antibody panels for flow cytometers with different configurations.

Tube no.	Fluorochrome 1	Fluorochrome 2	Fluorochrome 3	Fluorochrome 4	Fluorochrome 5	Fluorochrome 6	Fluorochrome 7	Fluorochrome 8	Fluorochrome 9	Fluorochrome 10	Fluorochrome 11	Fluorochrome 12	Fluorochrome 13	Fluorochrome 14	Fluorochrome 15	Fluorochrome 16
	Backbone markers			Myeloid lineage markers			Myelomonocytic lineage markers			Leukemia-associated or cross-lineage markers						
MRD 1	HLADR	CD34	CD117	CD45	CD38	CD33	CD13	CD15	X	X	X	X	X	X	X	X
MRD 2	HLADR	CD34	CD117	CD45	X	CD33	X	CD14	CD64	CD36	X	X	X	X	X	X
MRD 3	HLADR	CD34	CD117	CD45	CD38	X	CD13	X	X	X	CD7	CD123	X	X	X	X
MRD 4	HLADR	CD34	CD117	CD45	CD38	X	X	CD15	X	X	CD19	CD56	X	X	X	X
MRD-Additional	HLADR	CD34	CD117	CD45	CD38	X	X	X	X	X	DI*	CD203c or DI*	CD71 or DI*	X	X	X
10-color antibody panel																
MRD 1	HLA-DR	CD34	CD117	CD45	CD38	CD33	CD13	CD15	X	X	CD7	CD123	X	X	X	X
MRD 2	HLA-DR	CD34	CD117	CD45	CD38	CD33	X	CD14	CD64	CD36	X	X	CD203c or DI*	X	X	X
MRD 3	HLA-DR	CD34	CD117	CD45	CD38	X	CD13	CD15	CD64	X	CD19	CD56	X	X	X	X
12-color antibody panel																
MRD 1	HLA-DR	CD34	CD117	CD45	CD38	CD33	CD13	CD15	CD64 or DI*	X	CD7	CD123	CD71 or DI	X	X	X
MRD 2	HLA-DR	CD34	CD117	CD45	CD38	CD33	X	CD14	CD64	CD36	CD19	CD56	CD203c or DI*	X	X	X
13-color antibody panel																
MRD 1	HLA-DR	CD34	CD117	CD45	CD38	CD33	CD13	CD15	CD64 or DI*	CD36	CD7	CD123	CD203c or DI*	X	X	X
MRD 2	HLA-DR	CD34	CD117	CD45	CD38	CD33	X	CD14	CD64	CD36	CD19	CD56	CD203c or DI*	X	X	X
16-color antibody panel																
MRD 1	HLA-DR	CD34	CD117	CD45	CD38	CD33	CD13	CD15	CD64 or DI*	CD36	CD7	CD123	CD203c or DI*	X	X	X
MRD 2	HLA-DR	CD34	CD117	CD45	CD38	CD33	CD13	CD14	CD64	CD36	CD19	CD56	CD71 or DI*	X	X	X
MRD1																
MRD1	HLA-DR	CD34	CD117	CD45	CD38	CD33	CD13	CD15	CD64	CD36	CD7	CD123	CD203c DI*	CD19	CD56	CD14

Abbreviations: DI-drop in antibody.

Note: The antibody panel can be designed by selecting appropriate antibody-fluorochrome combinations based on the user's experience, instrument configuration and published literature.

*One can add any antibody marker at this place based on the diagnostic immunophenotype of AML. For example, if blasts were CD11b positive at diagnosis, it can be added instead of CD71 or CD203c or if blasts were positive for CD2 or CD5 or CD25, it can be added at this empty space.

CD203c can be helpful in AML cases with positive CD117 but negative HLADR expression at diagnosis.

Supp. Table 2 Immunophenotype of various normal precursor populations commonly seen in bone marrow samples for AML MRD analysis

CD45 vs. SSC progenitor compartment	Subpopulations	Immunophenotype of subpopulations (based on the markers commonly used in AML MRD panel)																	
		CD34	CD38	CD117	HLADR	CD45	CD13	CD33	CD15	CD36	CD64	CD14	CD123	CD203c	CD7	CD56	CD19	CD22	
CD34+	HSC and MPP	++	-/+	V+	+	++	+	+	-	-	-	-/+	-	-	-	-	-	-	
	GMP	++	++	V+	++	+	V+	S+	-	S+	-	-/+	-	S-/+	S+*	-	-	-	
	pDCP	+	++	-	++	++	-/+	-	+	+	-	+++	-	P+	P+	-	-	-/+	
	BaP	+	++	-/+	-/+	++	++	-	-/+	-	-	++	+	-	-	-	-	-	-
	MEP	+	++	++	-/+	+	-	-	-/+	-	-	-	-	-	S-/+	-	-	-	-
	CLP	++	+	-	++	+	-	-	-	-	-	-	-	-	-	-	-	-	+
	BCP (Hg1)	++	++	-	++	+	-	-	-	-	-	-	-	-	-	-	-	-	++
	MCP	+	++	++	-	++	+	++	-	-/+	-/+	-	-/+	+	-	-	-	-	-
	PMy	-	-/+	+	-/+	+	+++	++	+++	-/+	+	-	-	-	-	-*	-	-	-
	PMo	-	+	-/+	++	++	-	++	+	++	++	-	+	-	-	-*	-	-	-
CD34-CD117-	PNB	-	+	++	-/+	-	-	-	++	++	-	-	-	-	S-/+	-	-	-	-
	MC	-	++	+++	-	++	++	-	-	-/+	-	-/+	++	-	-	-	-	-	-
	imMo	-	-	-	++	++	-/+	++	+	++	-/+	+	-	-	-	-*	-	-	-
	NRBC	-	-	-	-	-/+	-	-	+++	-	-	-	-	-	-	-	-	-	-
	pDC	-	+	-	++	++	-	++	+	-	-	+++	-	-	P+	P+	-	-/+	
	Ba	-	+	-	-	++	++	+	+	-	-	+++	-	-	-	-	-	-/+	
	PCs	-	+++	-	-	V+	-	-	-	-	-	-	-	-	-	-	+	-	-
	BCP	-	++	-	++	+	-	-	-	-	-	-	-	-	-	-	++	++	++
	NK	-	+	-	-	++	-	-	-	-	-	-	-	-	++	++	-	-	-

Abbreviations: AML, acute myeloid leukemia; BaP, basophils precursors; BCP, B-cell precursors; CLP, common lymphoid progenitors; GMP, granulocyte-macrophage (monocyte) progenitors; Hg1, hematogones stage 1; HSC, hematopoietic stem cells; imMo, immature monocytes; MCP, mast cell precursors; MEP, megakaryocyte erythrocyte progenitors; MPP, multipotent progenitors; MRD, minimal residual disease; NK, natural killer cells; NRBC, nucleated RBCs; P, partial; PCs, plasma cells; pDCP, plasmacytoid dendritic cell precursors; PMo, precursor monocytes (promonocytes); Pmy, precursor myeloid cells (promyelocytes); PNB, precursor normoblasts (pronormoblasts), S, subset; V, variable.
 Note: (-) negative, (-/+) dim positive to negative, (+) dim positive, (++) moderate positive, (++++) strong positive.