Loss of plasmacytoid dendritic cell differentiation is highly predictive for post-induction measurable residual disease and inferior outcomes in acute myeloid leukemia

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Table S1 Antibody panels of immunophenotyping by flow cytometry

Myeloid tube 1	Myeloid tube 2	Myeloid tube 3	B-ALL	T-ALL	Intracytoplasmics
CD15 FITC (BC)	CD64 FITC (BC)	CD7 BB515 (BD HORIZON)	CD20 FITC (BD)	cyCD3 Alexa-488 (BD)	MPO FITC (BC)
CD33 PE (BC)	CD123 PE (BD PHARM)	CD56 PE (BC)	CD34 PE (BC)	CD7 PE (BD)	cyCD79a PE (BC)
CD117 PC5 (BC)	CD14 PC5 (BC)	CD5 PerCP-Cy5.5 (BD)	CD10 PC5.5 (BC)	CD56 PC5 (BC)	CD19 PC7 (BC)
CD13 PE-Cy7 (BD)	CD13 PE-Cy7 (BD)	CD33 PC7 (BC)	CD33 PC7 (BC)	CD16 PC5 (BC)	CD34 PerCP-Cy5.5 (BD)
CD34 APC (BC)	CD34 APC (BC)	CD34 APC (BC)	CD58 APC (BC)	CD5 PC7 (BC)	cyCD3 APC (BC)
CD71 APC-A700 (BC)	CD16 APC-A700 (BC)	CD4 APC-A700 (BC)	CD45 APC-H7 (BD)	CD3 APC (BD)	CD45 APC-H7 (BD)
CD38 APC-A750 (BC)	CD38 APC-A750 (BC)	CD38 APC-A750 (BC)	CD19 BV421 (BD)	CD10 APC-R700 (BD)	CD3 BV421 (BD HORIZON)
HLA-DR PAC BLUE (BC)	HLA-DR PAC BLUE (BC)	CD2 BV421 (BD PHARM)	CD38 BV510 (BD)	CD38 APC-A750 (BC)	
CD45 V500c (BD)	CD45 V500C (BD)	CD45 V500c (BD)		CD48 BV421 (BD)	
CD19 BV605 (BIOLEGEND)	CD11b BV605 (BD HORIZON)	CD25 BV605 (Biolegend)		CD45 V500c (BD)	

Table S2 Correlation of MRD vs. blast/PDC ratio with relapse-free survival and overall survival in patients with morphologic remission and full CR

		Relapse-free Survival		**Overall Survival**	
CR/CRi/MLFS					
		HR (95% CI)	P-value	HR (95% CI)	P-value
MRD	Positive (vs Negative)	3.98 (1.4-11.31)	0.007	3.81 (1.18-12.25)	0.017
Blast/PDC Ratio	≥ 10 (vs < 10)	3.83 (1.51-9.74)	0.007	2.79 (0.98-7.97)	0.077
Blast/PDC Ratio	Continuous on log scale	1.38 (1.16-1.65)	<0.001	1.32 (1.08-1.61)	0.006
CR only					
		HR (95% CI)	P-value	HR (95% CI)	P-value
MRD	Positive (vs Negative)	4.39 (1.44-13.37)	0.009	3.56 (0.99-12.73)	0.051
Blast/PDC Ratio	≥ 10 (vs < 10)	4.93 (1.71-14.2)	0.003	2.8 (0.79-9.92)	0.111
Blast/PDC Ratio	Continuous on log scale	1.57 (1.17-2.09)	0.002	1.32 (0.92-1.87)	0.127

Table S3 The impact of blast/PDC ratio on relapse-free survival and overall survival in post-induction MRD positive patients

		Relpase-free Survival	**Overall Survival**
		18-m Est. (95% CI)	18-m Est. (95% CI)
MRD	Negative	0.84 (0.72-0.98)	0.86 (0.74-0.99)
	Positive	0.47 (0.3-0.75)	0.64 (0.47-0.88)
Blast/PDC Ratio	< 10	0.79 (0.67-0.94)	0.8 (0.68-0.95)
	≥ 10	0.43 (0.24-0.75)	0.65 (0.46-0.92)
Among MRD-positive			
Blast/PDC Ratio	< 10	0.53 (0.22-0.99)	0.53 (0.22-0.99)
	≥ 10	0.39 (0.21-0.73)	0.63 (0.44-0.92)

Table S4 Clinical characteristics of MRD-pos. patients with blast/PDC ratio<10

Patients	Blast/PDC Ratio	CG	ELN risk	HSCT	Relapse	Death	Phenotype of abnormal blasts	Blasts with normal phenotype
1	0.5	Normal	A	Yes	Yes	Yes	CD34+CD38+CD33-HLA-DRbright	Present
2	0.7	Other	I	Yes	No	No	CD34+CD38+CD56+	Present
3	1.2	Normal	I	No	No	No	CD34+CD38+CD33-	Not sure
4	1.5	Other	I	Yes	No	No	CD34+CD38brightCD117-CD71dim	Present
5	1.6	ND	I	Yes	Yes	Yes	CD34+CD38-CD33bright	Present
6	1.9	Normal	I	Yes	No	No	CD34+CD38+CD117-HLA-DR bright	Present
7	2.4	Other	I	Yes	No	No	uniform expression of multiple markers	Not sure
8	2.5	Other	I	No	No	No	CD34+ CD38-CD25+	Present
9	3.0	Normal	I	Yes	No	Yes	CD34-CD117brightCD33brightHLA-DRvariable	present
10	3.2	Normal	I	Yes	No	No	CD34+CD38-CD25+CD56+	Present
11	4.2	Normal	F	No	No	No	CD34+CD38 dim CD56 bright	Present
12	5.9	Normal	A	No	No	No	CD34+CD38-CD25+CD5+	Present
13	7.6	Normal	A	Yes	No	No	CD34+CD38 dimCD117-	Present
14	7.9	Complex	A	Yes	No	No	CD34+CD38-CD33brightHLA-DRbright	Present
15	3.6	ND	A	Yes	No	Yes	CD34+CD38+HLA-DR-CD33+	Present

Abbreviations: CG, cytogenetics; HSCT, hematopoietic stem cell transplant; ND, not done; ELN risk: A, adverse; I, intermediate; F, favorable.

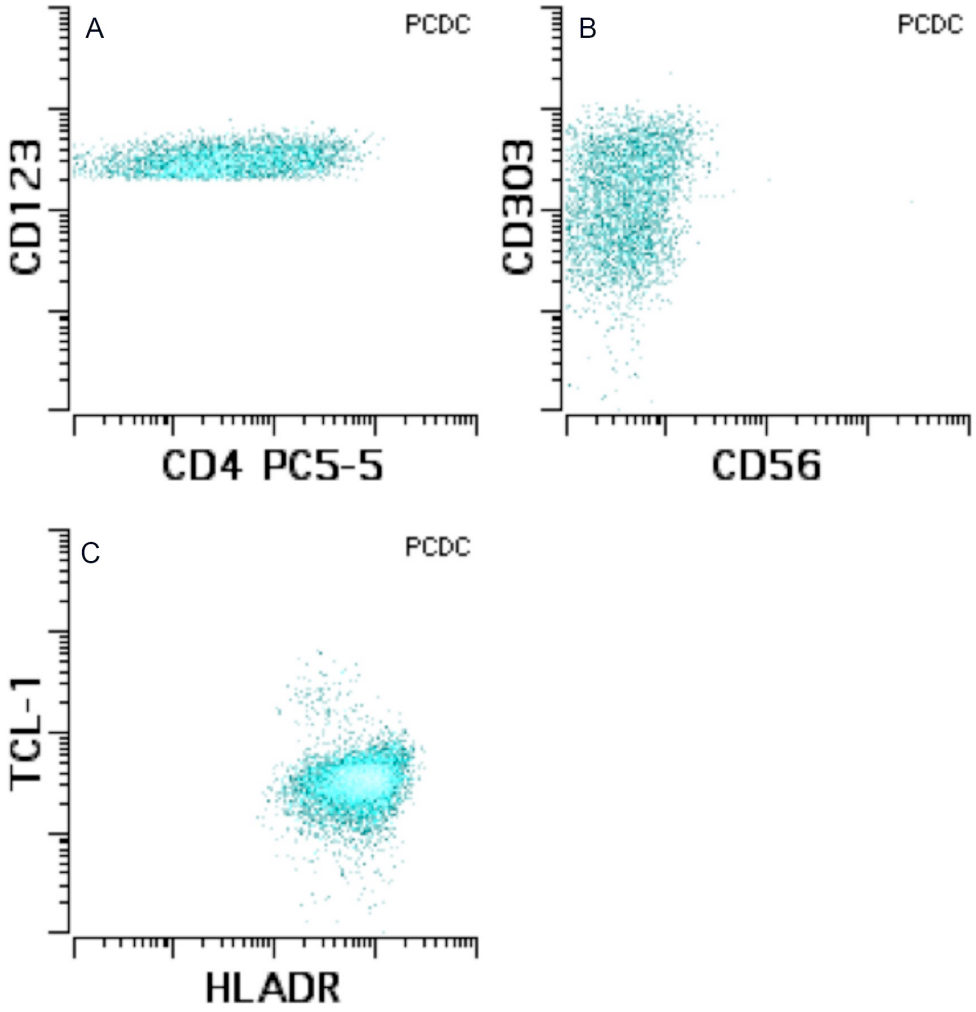

Figure S1 Immunophenotype of PDC in AML. A-C, PDC (gated by low side scatter, dim CD45, bright CD123 and HLA-DR) are positive for CD123, CD4, CD303 and HLA-DR, while negative for CD56 and TCL-1.

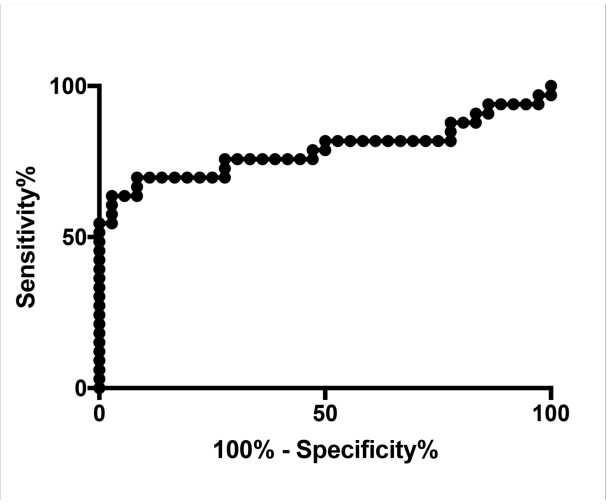

Figure S2 ROC curve of the predictive value of blast/PDC ratio on MRD positivity detected by DfN approach. A cut-off threshold of blast/PDC ratio at 10 has a corresponding specificity of 97.4% and a sensitivity of 58% for detecting MRD positivity.

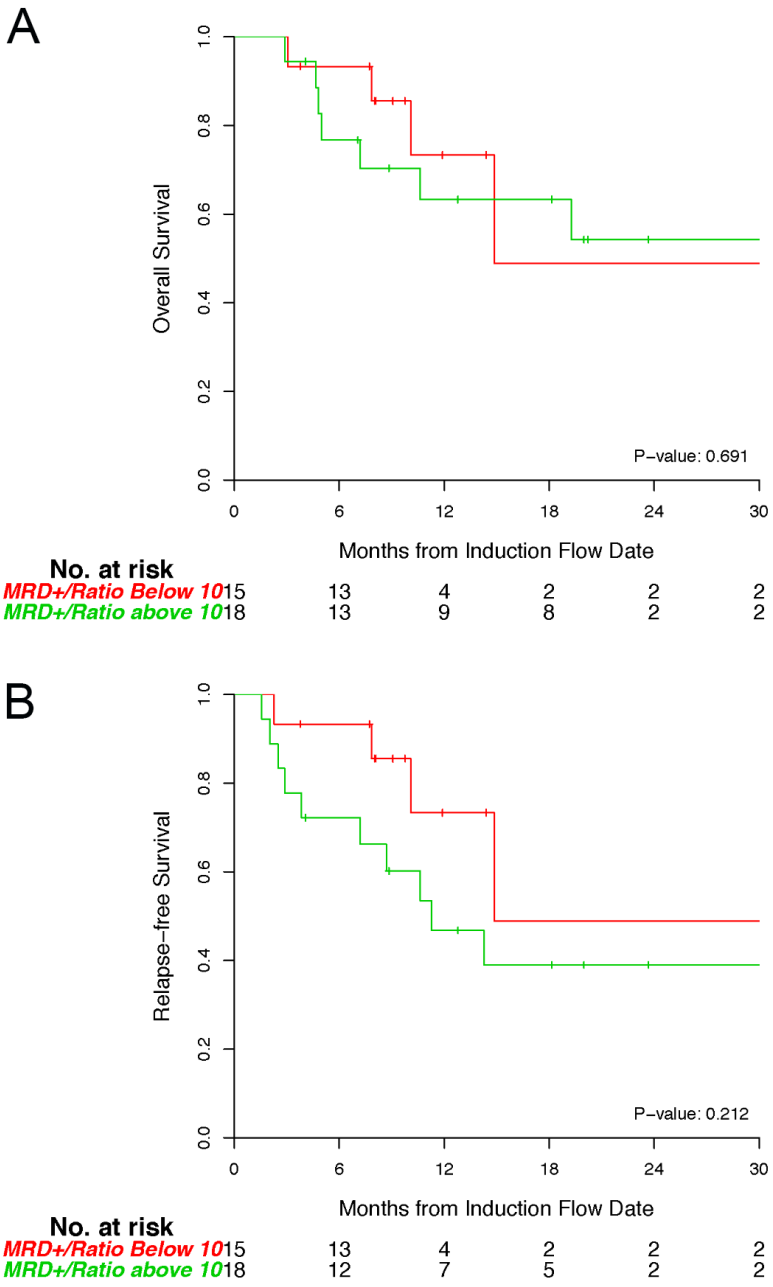

Figure S3 Correlation of blast/PDC ratio with outcomes in MRD-pos. patients. A. Overall survival is not different between blast/PDC ratio<10 and blast/PDC ratio≥10. B. Relapse-free survival appears superior in patients with blast/PDC ratio<10 although not reaching statistical significance due to the small numbers.