

Supplementary Table 1. Peripheral blood collection of the 45 patients analyzed in the study.

Patient ID	Peripheral blood collected		
	D0	D7	D14
#02	√	√	
#03	√	√	√
#04	√	√	√
#05	√		√
#06	√	√	√
#07	√	√	√
#08	√	√	√
#09	√		√
#10	√	√	√
#12	√	√	√
#13	√	√	√
#14	√		√
#15	√	√	
#16	√	√	
#17	√	√	√
#18	√	√	√
#19	√	√	
#20	√	√	√
#21	√	√	√
#22	√		√
#23	√		
#24	√	√	√
#25	√	√	
#28	√	√	
#29	√	√	√
#30	√	√	√
#32	√		
#33	√	√	√

#34	√		√
#35	√	√	√
#36	√	√	√
#37	√	√	√
#38	√	√	√
#39	√	√	√
#40	√	√	
#41	√	√	√
#42	√	√	√
#44	√	√	
#45	√	√	√
#46	√	√	
#47	√	√	
#48	√	√	√
#50	√	√	√
#51	√	√	√
#52	√	√	√

Supplementary Table 2. List of fluorochrome-conjugated antibodies used for flow cytometry analysis.

Antibody	Clone	Manufacturer	Catalog
BV421 Mouse Anti-Human CD274	MIH1	BD Biosciences	563738
BV421 Mouse Anti-Human CD25	M-A251	BD Biosciences	562442
BV421 Mouse IgG1, k Isotype Control	X40	BD Biosciences	562438
BV510 Mouse Anti-Human CD3	UCHT1	BD Biosciences	563109
BV510 Mouse Anti-Human CD11c	B-ly6	BD Biosciences	563026
BV605 Mouse Anti-Human CD16	3G8	BD Biosciences	563172
BV650 Mouse Anti-Human CD3	UCHT1	BD Biosciences	563852
BV711 Mouse Anti-Human CD15	W6D3	BD Biosciences	563142
BV786 Mouse Anti-Human CD56	NCAM16.2	BD Biosciences	564058
BV786 Mouse Anti-Human CD4	SK3	BD Biosciences	563877
BB515 Mouse Anti-Human CD11b	ICRF44	BD Biosciences	564518
PE-CF594 Mouse Anti-Human CD14	MφP9	BD Biosciences	562335
PE-CF594 Mouse Anti-Human CD19	HIB19	BD Biosciences	562294
PE-Cy™7 Mouse Anti-Human CD14	M5E2	BD Biosciences	560919
PE-Cy™7 Mouse Anti-Human CD8	RPA-T8	BD Biosciences	557746
FITC Mouse Anti-Human FOXP3	PCH101	eBioscience	11-4776-42
APC Mouse Anti-Human CD155	2H7CD155	eBioscience	17-1550-42
APC Mouse IgG1, k Isotype Control	P3.6.2.8.1	eBioscience	17-4714-82
Alexa Fluor 700 Mouse Anti-Human CD45	30-F11	BioLegend	56-0451-82
APC/Cy7 Mouse Anti-Human HLA-DR	L243	BioLegend	307618
APC/Cy7 Mouse Anti-Human CD127	A019D5	BioLegend	351348
PE Mouse Anti-Human VISTA	#730804	R&D Systems	FAB71261P
PE Mouse IgG2b, k Isotype Control	#133303	R&D Systems	IC0041P

Supplementary Table 3. Differentially expressed genes between classical monocytes from patients with DCB and NDB at D0.

Gene symbol	Fold change (log2)	Adjusted P-value
<i>BACH2</i>	8.15065756	2.61E-10
<i>FBXO5</i>	7.503135108	3.58E-07
<i>ARHGAP6</i>	6.987609842	8.84E-07
<i>SIGLEC11</i>	7.61156531	1.02E-06
<i>IL1A</i>	3.124589598	1.08E-06
<i>C6orf223</i>	8.788592216	1.08E-06
<i>NAT6</i>	7.484377497	1.26E-06
<i>RRN3P1</i>	5.407492044	1.95E-05
<i>ZNF621</i>	6.690656486	1.97E-05
<i>NMT2</i>	5.570606621	2.73E-05
<i>CKS2</i>	5.8634185	7.11E-05
<i>TNRC6C-AS1</i>	-9.209645989	8.31E-05
<i>SH2D2A</i>	8.07131159	0.000105
<i>ITSN1</i>	-1.656164041	0.000248
<i>SHB</i>	6.924519162	0.000248
<i>ZNF503</i>	-1.055831703	0.000368
<i>ZNF252P</i>	-7.430464565	0.0004
<i>SNHG8</i>	1.241449467	0.000951
<i>SPATA7</i>	6.838612604	0.000951
<i>S1PR1</i>	8.542160498	0.000951
<i>NUDT16</i>	-1.288396684	0.001049
<i>INHBA</i>	8.410508637	0.00292
<i>ZNF107</i>	-6.757870967	0.004127
<i>GATA3</i>	2.463040376	0.005499
<i>GSG1</i>	7.360924544	0.005499
<i>KIAA1524</i>	7.171326749	0.006204
<i>RORA-AS1</i>	7.89622813	0.011931
<i>ATG13</i>	-1.11185432	0.014602

<i>WDR33</i>	1.413643828	0.017333
<i>QPCTL</i>	-7.354993284	0.021569
<i>GNPDA1</i>	-1.796720914	0.025291
<i>SSNA1</i>	-1.316727774	0.028512
<i>RETN</i>	-2.95090775	0.031242
<i>ERCC6-PGBD3</i>	3.87229013	0.033488
<i>OCEL1</i>	-2.628918966	0.034989
<i>TAGAP</i>	1.326241188	0.034989
<i>EIF4E</i>	1.281956521	0.047562
<i>RNU1-13P</i>	4.75337987	0.052073
<i>CDC42EP2</i>	2.212647047	0.059686
<i>SGOL2</i>	-7.399279753	0.061423
<i>NAA10</i>	-1.722205256	0.061423
<i>CDC27</i>	-1.127874194	0.061423
<i>ZHX3</i>	6.916927738	0.061423
<i>ALG12</i>	-3.514786717	0.064517
<i>PSPC1</i>	1.261510479	0.066442
<i>PDCD4-AS1</i>	-4.709398484	0.070029
<i>OMA1</i>	-2.461894842	0.072656
<i>SERPINB10</i>	-8.833141958	0.073874
<i>MYEOV</i>	5.768652382	0.073874
<i>SCARNA21</i>	7.682069801	0.073874
<i>POP1</i>	-6.783782866	0.076369
<i>AUTS2</i>	7.971412062	0.088339
<i>CTNNAL1</i>	8.082798171	0.088339

Supplementary Table 4. Differentially expressed genes between classical monocytes from patients with DCB and NDB at D7.

Gene symbol	Fold change (log2)	Adjusted P-value
<i>TEKT4P2</i>	-7.94443	9.77E-08
<i>PURB</i>	1.353232	5.55E-06
<i>VAPB</i>	-1.40737	5.55E-06
<i>ZFP1</i>	-7.03048	5.55E-06
<i>ANKLE1</i>	-7.59113	5.55E-06
<i>IFI6</i>	1.879211	5.80E-06
<i>RRAGB</i>	-7.7515	1.75E-05
<i>ELP4</i>	-7.57578	2.19E-05
<i>ZKSCAN2</i>	-7.6419	0.000216
<i>SPIN2B</i>	-6.55512	0.000217
<i>EID3</i>	-7.64923	0.000217
<i>PARG</i>	-6.47313	0.000389
<i>MPO</i>	-7.58721	0.003745
<i>TRIM37</i>	-4.31079	0.004649
<i>SPATA2L</i>	-6.15228	0.005711
<i>CD274</i>	-6.26323	0.005711
<i>HABP4</i>	-7.51143	0.005711
<i>VPS37C</i>	1.318875	0.006875
<i>CKS1B</i>	-6.56603	0.006875
<i>ST20</i>	1.586598	0.007117
<i>FGFR10P</i>	-8.23699	0.007879
<i>URGCP</i>	2.306105	0.00978
<i>FAM60A</i>	1.509762	0.014238
<i>ZNF493</i>	-5.31755	0.014248
<i>USP45</i>	-6.39167	0.015798
<i>YARS2</i>	-5.6954	0.020533
<i>ADGRE3</i>	-7.2468	0.020865
<i>NUFIP1</i>	3.295105	0.02378

<i>IRF7</i>	1.431992	0.04139
<i>TRAF5</i>	-5.65693	0.049274
<i>YES1</i>	-5.50605	0.049884
<i>NF1</i>	1.710487	0.053973
<i>ZNF600</i>	-5.66345	0.058849
<i>FUNDC1</i>	-6.02692	0.058963
<i>MYLPF</i>	5.428788	0.089276
<i>OTUD1</i>	1.389367	0.091905
<i>SSRP1</i>	-1.08648	0.091905
<i>TPRKB</i>	-1.39178	0.091905
<i>THTPA</i>	-3.05813	0.091905

Supplementary Table 5. Differentially expressed genes between classical monocytes at D0 and D7 from patients with DCB.

Gene symbol	Fold change (log2)	Adjusted P-value
<i>C2orf69</i>	1.145926	3.77E-05
<i>RNF139-AS1</i>	-6.05895	0.001619
<i>NOB1</i>	-1.23061	0.001619
<i>MYLPF</i>	7.26786	0.001619
<i>HS3ST3B1</i>	7.869662	0.001619
<i>SIRT5</i>	-7.10149	0.00174
<i>PARG</i>	-6.34108	0.00174
<i>ETAA1</i>	-7.64467	0.001775
<i>NAA10</i>	1.526765	0.002571
<i>TBCK</i>	-6.22489	0.003057
<i>PHB</i>	1.269697	0.003057
<i>SLC12A2</i>	-7.16749	0.004575
<i>MRPL38</i>	2.018169	0.004575
<i>ZNF100</i>	2.636403	0.004575
<i>INF2</i>	6.717785	0.004832
<i>KCNAB1</i>	-5.51743	0.005352
<i>TMOD3</i>	1.095295	0.005352
<i>HYOU1</i>	1.514364	0.005352
<i>QPCTL</i>	6.263355	0.005352
<i>KIAA1407</i>	-7.21164	0.005555
<i>RPL19P12</i>	-1.28933	0.005749
<i>TRIM4</i>	1.616328	0.005749
<i>APOE</i>	8.317975	0.007185
<i>KAT7</i>	-1.97933	0.009202
<i>FOXRED2</i>	-5.06981	0.010305
<i>ZNF589</i>	-6.76914	0.011667
<i>CLPB</i>	-6.65362	0.011667
<i>TAGLN</i>	-5.10568	0.011667

<i>RNF6</i>	2.002706	0.011667
<i>DOHH</i>	6.119344	0.011667
<i>LRIG1</i>	6.32551	0.011667
<i>OAF</i>	-1.1813	0.015121
<i>MDFIC</i>	-6.85016	0.015898
<i>C1orf216</i>	-5.63349	0.017579
<i>NMT2</i>	-5.77441	0.02362
<i>PCNXL2</i>	-5.84957	0.024298
<i>ZSCAN25</i>	-7.14404	0.026287
<i>SPATA2L</i>	-5.61797	0.026287
<i>YIPF1</i>	1.805324	0.027129
<i>MCM4</i>	-5.00817	0.02811
<i>S1PR4</i>	1.032555	0.030751
<i>TRIM37</i>	-5.075	0.033988
<i>TMEM176A</i>	1.151419	0.036107
<i>TBC1D13</i>	-6.58246	0.036245
<i>PRSS53</i>	-6.51025	0.036245
<i>NEK8</i>	-5.36297	0.036245
<i>GRPEL2</i>	-4.54971	0.036245
<i>RPL32P3</i>	-3.96554	0.036245
<i>ZNF548</i>	-3.71936	0.036245
<i>OCIAD1</i>	-1.17257	0.036245
<i>MOB1A</i>	2.02873	0.036245
<i>CH17-340M24.3</i>	4.897154	0.036245
<i>RPS10P7</i>	-2.29232	0.036852
<i>DPH7</i>	-5.50533	0.036908
<i>TDP2</i>	2.462567	0.037077
<i>SNORA57</i>	-6.00182	0.03807
<i>PDCD6</i>	-1.66562	0.03807
<i>TMEM187</i>	-5.3443	0.038492
<i>RHD</i>	-7.45609	0.0391

<i>ELANE</i>	4.422501	0.044158
<i>TPRKB</i>	-1.37056	0.045036
<i>TMEM254</i>	-6.74721	0.046012
<i>FKBP15</i>	-1.12968	0.046012
<i>MRPL48</i>	-5.08807	0.046284
<i>FBXL3</i>	-3.86037	0.046284
<i>SYNPO2</i>	-7.56238	0.046423
<i>CLEC6A</i>	-6.80881	0.046423
<i>TRAM2</i>	-7.31566	0.047139
<i>OMA1</i>	-5.5448	0.047139
<i>SPIN4</i>	-6.33886	0.048267
<i>PRKCQ</i>	-6.09723	0.048267
<i>UBQLN4</i>	-5.90352	0.049893
<i>UTP6</i>	-7.51491	0.050804
<i>GRAP2</i>	-7.11296	0.050804
<i>CFLAR-AS1</i>	-6.43027	0.050804
<i>ZBTB41</i>	-5.59077	0.050804
<i>SFXN3</i>	1.117259	0.050804
<i>ENOX2</i>	-6.68658	0.051443
<i>NOMO1</i>	2.381557	0.051443
<i>MID1IP1-AS1</i>	-6.58778	0.052125
<i>RHNO1</i>	-7.53655	0.052251
<i>PUS1</i>	-6.94053	0.052251
<i>ACO1</i>	-6.66462	0.052251
<i>NFYC-AS1</i>	-5.29029	0.052251
<i>RRP9</i>	-5.00834	0.052251
<i>RORA-AS1</i>	-3.44022	0.052251
<i>KCNMB1</i>	3.772661	0.052251
<i>FRA10AC1</i>	-6.37559	0.052415
<i>PIAS3</i>	-7.68392	0.05749
<i>SEC31B</i>	-7.35077	0.057945

<i>STEAP4</i>	-7.35948	0.059738
<i>ZNF417</i>	7.478864	0.059738
<i>PP7080</i>	-6.77838	0.060351
<i>GNG7</i>	-6.32965	0.060403
<i>BOD1</i>	-4.62678	0.060403
<i>JUP</i>	-3.46583	0.060403
<i>PRMT5</i>	-5.14416	0.060935
<i>PIK3R4</i>	-5.48536	0.062009
<i>SUPT3H</i>	-6.0978	0.063727
<i>PANK3</i>	-4.82541	0.063727
<i>IKZF3</i>	-3.29017	0.063899
<i>NDUFA12</i>	1.299993	0.063899
<i>TEP1</i>	-7.13193	0.064208
<i>LAS1L</i>	-7.11231	0.064208
<i>BRAF</i>	-7.00333	0.064208
<i>RNF34</i>	-7.79305	0.064619
<i>RFX3</i>	-6.61299	0.064619
<i>ZNF845</i>	-5.10029	0.067361
<i>NF1</i>	1.62795	0.067607
<i>ENC1</i>	1.053379	0.06783
<i>VIPR1</i>	-6.86261	0.069152
<i>TAF1L</i>	-6.66167	0.069152
<i>ARID1B</i>	-1.25798	0.069152
<i>RNASEH2A</i>	-5.6632	0.070402
<i>SMPD2</i>	-5.10107	0.070402
<i>ADCY10P1</i>	-5.05582	0.070402
<i>CTAGE7P</i>	4.809455	0.070402
<i>TMEM80</i>	-3.77164	0.071061
<i>MEX3C</i>	-6.9542	0.072567
<i>SNAPC4</i>	-6.3136	0.072567
<i>APLF</i>	-8.45212	0.075481

<i>ABTB1</i>	-1.45808	0.076786
<i>RAP1GDS1</i>	-5.81029	0.076897
<i>CASD1</i>	-4.93791	0.077366
<i>CX3CR1</i>	-7.64904	0.077451
<i>ACSF3</i>	-5.99007	0.077451
<i>BMS1P6</i>	-5.25404	0.077451
<i>PIPSL</i>	-3.89394	0.077451
<i>DHX8</i>	1.543303	0.077588
<i>ALMS1</i>	-6.88535	0.083003
<i>SWSAP1</i>	-5.97119	0.083003
<i>FKRP</i>	-8.35022	0.08437
<i>R3HCC1L</i>	2.100275	0.08437
<i>ATP6V0A2</i>	7.516466	0.08437
<i>CTBS</i>	-1.09325	0.087422
<i>NDUFB6</i>	-3.81527	0.089149
<i>LRRC23</i>	-5.83882	0.089727
<i>ZNF783</i>	-6.36604	0.090674
<i>PITPNM2</i>	6.753539	0.090674
<i>ZKSCAN8</i>	-5.38335	0.091456
<i>METTL14</i>	2.749343	0.091456
<i>OTUD3</i>	-6.22913	0.091697
<i>DHX34</i>	1.527793	0.091697
<i>SCML4</i>	-6.22987	0.092404
<i>TEX10</i>	-6.5709	0.093276
<i>POLR2I</i>	2.046113	0.093276
<i>DOLPP1</i>	-7.00696	0.093542
<i>TTN-AS1</i>	-6.5789	0.093542
<i>C2orf74</i>	-6.56888	0.093542
<i>PGBD4</i>	-6.13542	0.093542
<i>ARL1</i>	-6.6038	0.093861
<i>IFFO1</i>	-1.02322	0.093861

MVK

-5.10257

0.098213

Supplementary Table 6. Differentially expressed genes between classical monocytes at D0 and D7 from patients with NDB.

Gene symbol	Fold change (log2)	Adjusted P-value
<i>LENG8-AS1</i>	5.251524	0.000328
<i>HILPDA</i>	5.970084	0.000328
<i>BACH2</i>	8.747973	0.000328
<i>AUTS2</i>	8.199014	0.001022
<i>ANK3</i>	6.961462	0.001173
<i>ABCB10</i>	6.369108	0.001383
<i>SH2D2A</i>	8.104254	0.001383
<i>ECI2</i>	-6.212	0.001632
<i>GAN</i>	7.662459	0.001632
<i>FLNC</i>	-7.65071	0.002206
<i>ZNF33B</i>	4.891705	0.003604
<i>HBA1</i>	4.906643	0.003604
<i>BRCA2</i>	-1.66141	0.004981
<i>FLVCR1</i>	2.899743	0.006672
<i>TMOD2</i>	-3.41111	0.010306
<i>RASGRP1</i>	8.396223	0.010306
<i>C12orf76</i>	6.661049	0.012457
<i>FCHO2</i>	-1.29215	0.016538
<i>DDX47</i>	2.412834	0.023613
<i>AURKA</i>	-5.54322	0.028536
<i>TLCD2</i>	3.338249	0.033656
<i>HBM</i>	6.67833	0.037397
<i>ASH1L-AS1</i>	6.487424	0.043458
<i>KLRB1</i>	6.28643	0.04978
<i>SURF2</i>	7.479731	0.04978
<i>BTBD19</i>	-7.00011	0.050557
<i>UBA7</i>	-1.5818	0.050557
<i>SLED1</i>	6.38034	0.050557

<i>CRIPAK</i>	7.322236	0.050557
<i>TC2N</i>	7.612699	0.050557
<i>S1PR5</i>	6.000998	0.050601
<i>TGFB2</i>	5.554031	0.051016
<i>ABLIM1</i>	7.536741	0.053538
<i>HBB</i>	3.820448	0.061888
<i>MYEOV</i>	6.736616	0.069488
<i>BISPR</i>	5.129274	0.071118
<i>MAP3K15</i>	-7.55429	0.078589
<i>POLD3</i>	-1.30429	0.084276
<i>CLEC5A</i>	-2.50951	0.090888
<i>FAM184B</i>	6.906187	0.090888
<i>PHF13</i>	7.597289	0.090888
<i>PAXIP1-AS1</i>	5.76484	0.093594
<i>CDC42BPA</i>	4.539569	0.097316
<i>SLC6A8</i>	5.227147	0.097316
<i>INSIG2</i>	6.441514	0.097316

Supplementary Table 7. Univariate and multivariate analyses of clinical characteristics and peripheral blood biomarkers in association with progression-free survival.

Characteristics	Category	Univariate		Multivariate	
		HR (95% CI)	P	HR (95% CI)	P
Age (years)	< 60	1		-	
	≥ 60	1.104 (0.587-2.073)	0.759		
Sex	Male	1		-	
	Female	1.296 (0.566-2.972)	0.540		
Performance status	ECOG 0	1		1	
	ECOG 1-2	1.935 (0.748-5.001)	0.173	1.742 (0.651-4.661)	0.269
Child-Pugh score	5-6	1		-	
	7-9	1.492 (0.748-2.978)	0.257		
Etiology	Viral	1		-	
	Non-viral	0.975 (0.401-2.371)	0.956		
Lymph node metastasis	No	1		-	
	Yes	1.163 (0.602-2.245)	0.654		
Number of involved sites	1-3	1		1	
	≥4	2.202 (0.888-5.457)	0.088	1.655 (0.589-4.651)	0.340
Major vessel invasion	Absent	1		-	
	Present	1.080 (0.574-2.034)	0.811		
Alpha-fetoprotein (ng/mL)	< 400	1		-	

	≥ 400	1.236 (0.637-2.400)	0.531		
PIVKA-II (mAU/mL)	< 2500	1	-		
	≥ 2500	0.654 (0.327-1.309)	0.231		
Neutrophil-to-lymphocyte ratio	< 3.3	1	-		
	≥ 3.3	1.018 (0.542-1.912)	0.957		
Monocyte-to-lymphocyte ratio	< 0.5	1	-		
	≥ 0.5	1.064 (0.555-2.042)	0.851		
Monocyte index	< 1	1	1		
	≥ 1	0.345 (0.158-0.753)	0.008	0.367 (0.164-0.820)	0.015
Previous locoregional therapy	Not done	1	1		
	Done	0.557 (0.241-1.285)	0.170	0.600 (0.241-1.495)	0.273
Response to sorafenib	PR/SD	1	-		
	PD	1.194 (0.626-2.280)	0.590		

Abbreviations: HR, hazard ratio; CI, confidence interval; ECOG, Eastern Cooperative Oncology Group; PR, partial response; SD, stable disease; PD, progressive disease.

Supplementary Table 8. Univariate and multivariate analyses of clinical characteristics and peripheral blood biomarkers in association with overall survival.

Characteristics	Category	Univariate		Multivariate	
		HR (95% CI)	P	HR (95% CI)	P
Age (years)	< 60	1		1	
	≥ 60	0.574 (0.273-1.208)	0.144	1.388 (0.439-4.388)	0.576
Sex	Male	1		-	
	Female	1.432 (0.540-3.798)	0.470		
Performance status	ECOG 0	1		1	
	ECOG 1-2	5.019 (1.173-21.470)	0.030	11.613 (1.714-78.668)	0.012
Child-Pugh score	5-6	1		1	
	7-9	2.640 (1.183-5.893)	0.018	0.518 (0.124-2.161)	0.366
Etiology	Viral	1		-	
	Non-viral	0.942 (0.359-2.474)	0.903		
Lymph node metastasis	No	1		-	
	Yes	1.333 (0.616-2.884)	0.465		
Number of involved sites	1-3	1		1	
	≥4	2.642 (0.974-7.164)	0.056	9.013 (1.504-54.020)	0.016
Major vessel invasion	Absent	1		1	
	Present	1.895 (0.877-4.096)	0.104	1.765 (0.539-5.775)	0.348
Alpha-fetoprotein (ng/mL)	< 400	1		-	

	≥ 400	1.244 (0.590-2.626)	0.566		
PIVKA-II (mAU/mL)	< 2500	1	-		
	≥ 2500	1.320 (0.621-2.808)	0.471		
Neutrophil-to-lymphocyte ratio	< 3.3	1	-		
	≥ 3.3	1.144 (0.557-2.351)	0.713		
Monocyte-to-lymphocyte ratio	< 0.5	1	-		
	≥ 0.5	1.310 (0.621-2.765)	0.478		
Monocyte index	< 1	1	1		
	≥ 1	0.476 (0.207-1.091)	0.079	0.319 (0.115-0.886)	0.028
Previous locoregional therapy	Not done	1	1		
	Done	0.300 (0.124-0.727)	0.007	0.093 (0.023-0.386)	0.001
Response to sorafenib	PR/SD	1	1		
	PD	1.789 (0.849-3.771)	0.126	2.204 (0.845-5.751)	0.106

Abbreviations: HR, hazard ratio; CI, confidence interval; ECOG, Eastern Cooperative Oncology Group; PR, partial response; SD, stable disease; PD, progressive disease.