

Table S1. List of target genes of the NGS panel.

Target genes	Interval	Regions	Size	Coverage
<i>ABCA12</i>	chr2:215797358-216002931	54	7929	100.000
<i>ABL1</i>	chr9:133589707-133761070	12	3529	100.000
<i>ASXL1</i>	chr20:30946579-31025141	17	4720	99.873
<i>ATM</i>	chr11:108098352-108236235	62	9171	100.000
<i>ATRX</i>	chrX:76763829-77041487	36	7543	100.000
<i>ATXN7L1</i>	chr7:105248299-105517004	15	3132	100.000
<i>BCOR</i>	chrX:39909169-39937182	15	5348	100.000
<i>BRAF</i>	chr7:140426294-140624503	21	2379	100.000
<i>BRCC3</i>	chrX:154299803-154348425	11	1021	92.654
<i>CALR</i>	chr19:13049494-13054795	10	1294	100.000
<i>CBL</i>	chr11:119077128-119170491	16	2721	100.000
<i>CBLB</i>	chr3:105377814-105588232	20	3079	100.000
<i>CD101</i>	chr1:117544440-117576723	9	3066	100.000
<i>CEBPA</i>	chr19:33792244-33793425	1	1182	100.000
<i>CREBBP</i>	chr16:3777719-3929917	31	7368	98.846
<i>CSF1R</i>	chr5:149433632-149465990	22	3003	95.771
<i>CSF3R</i>	chr1:36931697-36945097	16	2698	100.000
<i>CTCF</i>	chr16:67644736-67671775	10	2184	100.000
<i>CUX1</i>	chr7:101459311-101926382	34	5433	100.000
<i>DNMT1</i>	chr19:10244343-10311559	43	5292	96.977
<i>DNMT3A</i>	chr2:25457148-25536853	25	2888	99.169
<i>EGFR</i>	chr7:55086971-55273310	31	4084	100.000
<i>EP300</i>	chr22:41489009-41574960	31	7245	100.000
<i>ERG</i>	chr21:39739557-39947624	12	1764	99.206
<i>ETV6</i>	chr12:11803062-12044535	10	1443	100.000
<i>EZH2</i>	chr7:148504738-148544390	21	2456	100.000
<i>FBXW7</i>	chr4:153244033-153332955	14	2618	100.000
<i>FLT3</i>	chr13:28578189-28674647	25	3004	100.000
<i>GATA1</i>	chrX:48649517-48652675	5	1346	100.000
<i>GATA2</i>	chr3:128199862-128205874	5	1443	100.000
<i>GNAS</i>	chr20:57415162-57485884	17	4096	100.000
<i>HIPK2</i>	chr7:139257673-139477422	16	3708	100.000
<i>IDH1</i>	chr2:209101803-209116275	8	1248	100.000
<i>IDH2</i>	chr15:90627498-90645622	11	1359	100.000
<i>INVS</i>	chr9:102866804-103062956	17	3395	99.028
<i>IRF1</i>	chr5:131819643-131825170	9	978	100.000
<i>JAK2</i>	chr9:5021988-5126791	23	3399	100.000
<i>KDM2B</i>	chr12:121867919-122018816	29	4276	100.000
<i>KDM6A</i>	chrX:44732798-44970656	31	4470	100.000
<i>KIT</i>	chr4:55524182-55604723	21	2931	100.000
<i>KMT2A</i>	chr11:118307228-118392887	38	12082	99.479
<i>KMT2D</i>	chr12:49415563-49449107	55	16662	99.424
<i>KRAS</i>	chr12:25362729-25398318	6	708	100.000
<i>LAMB4</i>	chr7:107664484-107763609	35	5507	96.459
<i>MECOM</i>	chr3:168802697-169381160	20	3816	97.642
<i>MET</i>	chr7:116335811-116436178	21	4359	99.014
<i>MLL3</i>	chr7:151833917-152132871	62	15030	99.741
<i>MLL5</i>	chr7:104681400-104753780	27	5743	100.000
<i>MN1</i>	chr22:28146903-28196531	2	3963	100.000
<i>MPL</i>	chr1:43803520-43818443	12	1993	100.000
<i>NCOR2</i>	chr12:124809948-124979797	49	7734	99.289
<i>NF1</i>	chr17:29422226-29705949	63	9011	100.000
<i>NLRP1</i>	chr17:5405134-5487277	18	4493	97.930
<i>NOTCH1</i>	chr9:139390523-139440238	34	7668	100.000
<i>NPM1</i>	chr5:170814953-170837569	12	894	100.000
<i>NRAS</i>	chr1:115251156-115258781	4	570	100.000
<i>NRD1</i>	chr1:52254908-52344287	34	3696	99.026

<i>NUP98</i>	chr11:3692612-3803347	35	5567	100.000
<i>OCA2</i>	chr15:28000534-28327020	24	2573	100.000
<i>PDGFRA</i>	chr4:55106220-55161439	24	3450	98.174
<i>PHF12</i>	chr17:27233201-27278622	17	3519	100.000
<i>PHF6</i>	chrX:133511648-133559360	9	1207	100.000
<i>PRPF40B</i>	chr12:50017374-50037975	26	2682	100.000
<i>PRPF8</i>	chr17:1553953-1587865	42	7151	100.000
<i>PTPN11</i>	chr12:112856916-112942568	16	1822	98.024
<i>RAD21</i>	chr8:117859739-117878968	13	1896	100.000
<i>RAD50</i>	chr5:131893017-131978781	27	4211	95.559
<i>RINT1</i>	chr7:105172763-105207758	16	2417	98.428
<i>ROBO1</i>	chr3:78648063-79639061	34	5223	100.000
<i>ROBO2</i>	chr3:75986645-77695209	32	4862	100.000
<i>RUNX1</i>	chr21:36164432-36421196	11	1584	97.790
<i>RUNX1T1</i>	chr8:92972470-93115112	20	2350	98.596
<i>SETBP1</i>	chr18:42281312-42643663	6	4980	100.000
<i>SF3A1</i>	chr22:30730583-30752781	16	2382	100.000
<i>SF3B1</i>	chr2:198257027-198299723	27	4045	100.000
<i>SMC1A</i>	chrX:53407024-53449549	26	3882	100.000
<i>SMC3</i>	chr10:112327575-112364060	29	3654	100.000
<i>SRSF2</i>	chr17:74732243-74733242	2	666	100.000
<i>STAG2</i>	chrX:123156478-123234447	34	3861	100.000
<i>TET1</i>	chr10:70332096-70451571	11	6411	100.000
<i>TET2</i>	chr4:106111627-106197676	10	6165	100.000
<i>TP53</i>	chr17:7565257-7579912	14	1378	91.655
<i>TP53BP1</i>	chr15:43699581-43785241	31	6130	100.000
<i>U2AF1</i>	chr21:44513212-44527604	9	790	94.430
<i>U2AF2</i>	chr19:56166471-56185434	14	1541	100.000
<i>WT1</i>	chr11:32410604-32456891	11	1568	100.000
<i>ZRSR2</i>	chrX:15808619-15841365	12	1690	80.592

Table S2. List of SNPs included in the NGS chimerism calculation.

Marker number	Gene	Chr	Coordinate	dbSNP ID	ExAC (Total)	ExAC (East Asian)	KRGDB	Ref	Alt	Read depth (mean $\pm$ SD)	%BE	%ME
1	<i>CD101</i>	1	117560818	rs3736908	0.35	0.61	0.52	A	G	1313.08 $\pm$ 260.08	0.06	4.04
2	<i>DNMT3A</i>	2	25458546	rs2304429	0.52	0.29	0.3	C	T	1215.08 $\pm$ 225.42	0.05	2.27
3	<i>DNMT3A</i>	2	25463483	rs2289195	0.41	0.24	0.26	G	A	884.92 $\pm$ 152.59	0.07	-0.56
4	<i>DNMT3A</i>	2	25469913	rs2276599	0.71	0.6	0.57	C	T	766.33 $\pm$ 124.52	0.02	-0.7
5	<i>SF3B1</i>	2	198257795	rs4685	0.66	0.54	0.64	T	C	2257.00 $\pm$ 365.74	0.06	-1.55
6	<i>SF3B1</i>	2	198263146	rs16865262	0.2	0.27	0.3	T	C	1795.33 $\pm$ 301.50	0.03	-1.72
7	<i>SF3B1</i>	2	198265173	rs788017	0.65	0.53	0.62	T	A	1027.83 $\pm$ 205.29	0.09	-8.03
8	<i>SF3B1</i>	2	198265526	rs788018	0.66	0.53	0.64	A	G	2364.58 $\pm$ 368.06	0.10	5.43
9	<i>SF3B1</i>	2	198283305	rs788023	0.66	0.53	0.63	T	C	1260.83 $\pm$ 210.06	0.06	-3.45
10	<i>ABCA12</i>	2	215820013	rs10498027	0.35	0.23	0.21	G	A	2304.00 $\pm$ 491.21	0.10	-3.49
11	<i>ABCA12</i>	2	215833415	rs4673925	0.51	0.27	0.23	A	G	1163.50 $\pm$ 234.53	0.08	4.23
12	<i>ABCA12</i>	2	215865575	rs10498030	0.26	0.38	0.36	T	C	2429.33 $\pm$ 437.68	0.07	-1.96
13	<i>ABCA12</i>	2	215901774	rs17501837	0.21	0.4	0.47	C	T	1044.75 $\pm$ 264.25	0.08	6.99
14	<i>ABCA12</i>	2	215928972	rs1523721	0.57	0.7	0.74	G	C	1137.17 $\pm$ 209.76	0.13	-1.39
15	<i>ROBO2</i>	3	77684222	rs3821735	0.08	0.19	0.21	C	T	1030.67 $\pm$ 189.65	0.12	-1.25
16	<i>ROBO1</i>	3	78700901	rs6795556	0.22	0.21	0.27	G	T	1774.42 $\pm$ 344.02	0.07	2.81
17	<i>ROBO1</i>	3	78717343	rs2271151	0.23	0.22	0.27	C	T	2217.83 $\pm$ 419.49	0.09	3.83
18	<i>ROBO1</i>	3	78737962	rs967454	0.44	0.21	0.21	G	A	1191.67 $\pm$ 235.73	0.10	-2.14
19	<i>ROBO1</i>	3	78796078	rs2304503	0.5	0.23	0.21	C	A	1149.92 $\pm$ 257.54	0.09	-8.24
20	<i>CBLB</i>	3	105389153	rs11713094	0.22	0.21	0.23	A	G	1382.33 $\pm$ 248.81	0.07	4.83
21	<i>CBLB</i>	3	105422844	rs2305037	0.73	0.76	0.77	C	T	513.00 $\pm$ 130.18	0.07	4.41
22	<i>CBLB</i>	3	105438957	rs2305036	0.23	0.24	0.23	T	G	1605.33 $\pm$ 268.66	0.04	-9.46
23	<i>GATA2</i>	3	128204951	rs2335052	0.2	0.38	0.4	C	T	711.17 $\pm$ 128.09	0.11	-0.23
24	<i>TET2</i>	4	106155185	rs12498609	0.06	0.2	0.21	C	G	2234.00 $\pm$ 416.36	0.07	1.49
25	<i>TET2</i>	4	106196092	rs2647243	0.91	0.57	0.59	C	T	1254.33 $\pm$ 219.94	0.05	5.35
26	<i>TET2</i>	4	106196951	rs2454206	0.3	0.21	0.21	A	G	2294.33 $\pm$ 458.37	0.07	6.13
27	<i>FBXW7</i>	4	153252061	rs10033601	0.38	0.45	0.44	A	G	1591.25 $\pm$ 278.16	0.09	3.33
28	<i>IRF1</i>	5	131819798	rs2070731	0.33	0.34	0.24	T	C	853.92 $\pm$ 177.38	0.05	-3.02
29	<i>IRF1</i>	5	131819800	rs2070730	0.35	0.34	0.24	G	A	841.67 $\pm$ 173.36	0.04	-3.56
30	<i>IRF1</i>	5	131822055	rs9282762	0.35	0.34	0.24	T	C	1099.58 $\pm$ 204.94	0.02	-9.04
31	<i>IRF1</i>	5	131822224	rs9282761	0.35	0.34	0.24	T	C	1051.50 $\pm$ 188.73	0.03	-4.92
32	<i>CSF1R</i>	5	149435759	rs216136	0.53	0.47	0.39	G	A	1316.67 $\pm$ 229.41	0.15	0.06
33	<i>CSF1R</i>	5	149456811	rs3829987	0.1	0.22	0.23	G	A	1243.67 $\pm$ 227.56	0.17	-6.09
34	<i>CSF1R</i>	5	149457678	rs2228422	0.51	0.22	0.21	G	A	1600.33 $\pm$ 300.18	0.10	-5.97
35	<i>NPM1</i>	5	170819887	rs3830035	0.41	0.55	0.6	G	A	1998.50 $\pm$ 367.12	0.05	-1.06
36	<i>NPM1</i>	5	170820024	rs3830036	0.41	0.54	0.6	G	A	1753.67 $\pm$ 312.97	0.08	-3.67
37	<i>EGFR</i>	7	55214348	rs2072454	0.51	0.37	0.37	C	T	1514.50 $\pm$ 282.44	0.06	-0.77
38	<i>EGFR</i>	7	55221655	rs4947986	0.31	0.64	0.65	G	A	984.50 $\pm$ 166.23	0.17	0.83
39	<i>EGFR</i>	7	55229255	rs2227983	0.29	0.53	0.57	G	A	961.00 $\pm$ 158.68	0.09	-3.18
40	<i>EGFR</i>	7	55238874	rs2227984	0.38	0.54	0.61	T	A	1784.17 $\pm$ 354.45	0.04	-2.37
41	<i>EGFR</i>	7	55268916	rs2293347	0.14	0.27	0.34	C	T	2004.42 $\pm$ 399.01	0.06	1.87
42	<i>KMT2E</i>	7	104717517	rs2240455	0.22	0.64	0.68	C	T	1901.33 $\pm$ 392.28	0.04	6.93
43	<i>KMT2E</i>	7	104741842	rs10953468	0.32	0.29	0.28	A	T	961.33 $\pm$ 231.90	0.08	1.83
44	<i>KMT2E</i>	7	104742054	rs11976329	0.21	0.57	0.63	C	T	1214.83 $\pm$ 295.25	0.06	4.87
45	<i>LAMB4</i>	7	107745029	rs2074748	0.05	0.16	0.21	A	G	2437.83 $\pm$ 455.63	0.09	3.16

46	LAMB4	7	107746253	rs420753	0.39	0.38	0.41	A	G	1296.92±277.39	0.05	4.28
47	EZH2	7	148508833	rs2072407	0.67	0.67	0.65	A	G	1189.67±222.65	0.14	2.86
48	EZH2	7	148543525	rs10274535	0.7	0.66	0.65	A	G	1588.33±307.23	0.11	-0.06
49	KMT2C	7	151842397	rs2240819	0.07	0.17	0.22	C	T	1853.25±346.13	0.09	3.73
50	KMT2C	7	151859683	rs74483926	0.05	0.18	0.22	G	A	2247.17±411.58	0.10	1.71
51	KMT2C	7	151873853	rs6464211	0.24	0.32	0.32	C	T	2511.17±449.18	0.07	2.49
52	KMT2C	7	151874498	rs10252263	0.07	0.17	0.22	C	T	2391.17±405.30	0.11	1.76
53	JAK2	9	5050706	rs2230722	0.32	0.27	0.24	C	T	2071.67±417.57	0.09	5.97
54	JAK2	9	5090934	rs2274649	0.28	0.26	0.23	A	T	682.58±149.04	0.02	5.01
55	ABL1	9	133753980	rs34001282	0.01	0.02	0.04	C	G	918.25±157.40	0.19	9.18
56	ABL1	9	133760635	rs35445683	0.34	0.03	0.03	A	G	1261.83±230.68	0.08	4.17
57	ABL1	9	133761001	rs1056171	0.55	0.6	0.6	A	G	1168.17±230.30	0.11	5.94
58	NOTCH1	9	139407932	rs2229971	0.4	0.79	0.78	A	G	1164.17±189.92	0.17	2.63
59	TET1	10	70332580	rs10823229	0.33	0.38	0.35	A	G	2344.67±408.04	0.09	2.9
60	TET1	10	70332672	rs12773594	0.18	0.17	0.22	T	A	2127.42±365.70	0.08	-3.24
61	TET1	10	70332862	rs12221107	0.12	0.15	0.2	C	T	1972.58±380.83	0.06	4.25
62	SMC3	10	112343591	rs11195199	0.15	0.25	0.31	G	A	1198.08±317.27	0.10	-2.09
63	NUP98	11	3714489	rs1875	0.21	0.31	0.28	C	T	1935.92±355.23	0.08	0.99
64	WT1	11	32410774	rs1799937	0.35	0.72	0.69	A	G	1138.67±217.44	0.12	9.49
65	WT1	11	32417945	rs16754	0.24	0.69	0.67	T	C	1611.00±285.09	0.09	-1.59
66	ATM	11	108225483	rs664982	0.53	0.41	0.46	C	T	1166.42±274.58	0.05	2.42
67	ETV6	12	12006544	rs17210957	0.18	0.4	0.43	G	A	1251.92±256.22	0.10	-0.64
68	KMT2D	12	49424534	rs11168830	0.1	0.26	0.29	G	A	726.25±153.13	0.09	-2.72
69	KMT2D	12	49425978	rs3741622	0.32	0.44	0.36	T	C	1092.58±151.95	0.07	-4.38
70	KDM2B	12	121881848	rs10849885	0.38	0.44	0.39	G	A	570.17±110.48	0.07	-4.84
71	NCOR2	12	124885249	rs2293514	0.66	0.74	0.71	C	T	500.17±100.12	0.09	8.59
72	NCOR2	12	124968349	rs747443	0.64	0.55	0.54	T	C	574.75±108.73	0.09	-3.23
73	FLT3	13	28589267	rs4073630	0.48	0.41	0.38	C	T	1280.17±222.92	0.09	4.83
74	FLT3	13	28592546	rs17086226	0.24	0.25	0.27	T	C	1389.58±254.30	0.06	-2.01
75	FLT3	13	28607989	rs2491223	0.71	0.75	0.7	T	G	1219.08±204.80	0.12	-2.66
76	FLT3	13	28609825	rs2491227	0.7	0.75	0.7	A	G	1400.58±252.82	0.14	1.45
77	FLT3	13	28610183	rs2491231	0.7	0.75	0.7	A	G	1396.00±234.52	0.13	-1.5
78	FLT3	13	28624294	rs1933437	0.61	0.77	0.76	G	A	2277.25±418.11	0.07	-2.23
79	OCA2	15	28197037	rs1800414	0.04	0.6	0.54	T	C	1714.08±363.04	0.15	-5.86
80	OCA2	15	28235773	rs1800404	0.64	0.38	0.44	C	T	1040.75±189.17	0.13	-1.67
81	TP53BP1	15	43720197	rs550239	0.19	0.41	0.37	C	T	1214.58±218.31	0.09	0.52
82	TP53BP1	15	43724646	rs2602141	0.36	0.41	0.45	T	G	2499.42±447.23	0.04	-1.76
83	TP53BP1	15	43748304	rs690367	0.36	0.41	0.45	A	G	2571.17±419.73	0.07	3.05
84	TP53BP1	15	43762196	rs689647	0.2	0.41	0.45	C	T	1570.42±262.14	0.05	-0.21
85	TP53BP1	15	43767774	rs560191	0.36	0.41	0.45	G	C	1289.58±262.24	0.09	-1.84
86	TP53BP1	15	43784475	rs2439831	0.19	0.41	0.45	C	T	1910.67±345.46	0.04	3.39
87	IDH2	15	90627616	rs60147683	0.26	0.23	0.25	T	C	694.92±140.87	0.07	-3.08
88	NLRP1	17	5425077	rs11651270	0.45	0.24	0.25	T	C	846.50±147.64	0.03	3.94
89	NLRP1	17	5487164	rs884367	0.25	0.67	0.64	C	G	773.92±146.88	0.10	7.3
90	TP53	17	7579801	rs1642785	0.67	0.57	0.57	G	C	612.42±137.84	0.10	2.77
91	NF1	17	29486152	rs2952976	0.63	0.56	0.52	G	A	1260.00±240.34	0.08	0.94
92	NF1	17	29508775	rs1801052	0.62	0.56	0.53	G	A	1133.50±204.72	0.11	-5.64
93	NF1	17	29541437	rs2905876	0.61	0.56	0.53	T	C	911.33±171.70	0.04	-6.44

94	<i>NF1</i>	17	29553485	rs2285892	0.38	0.52	0.59	G	A	1689.25±317.33	0.13	-0.75
95	<i>NF1</i>	17	29653293	rs9894648	0.6	0.44	0.46	T	C	1299.08±245.00	0.10	0.38
96	<i>NF1</i>	17	29679246	rs964288	0.53	0.35	0.34	G	A	956.58±175.84	0.19	-0.34
97	<i>SETBP1</i>	18	42456653	rs663651	0.52	0.5	0.47	G	A	1344.58±250.66	0.05	-8.2
98	<i>SETBP1</i>	18	42532606	rs3744825	0.12	0.28	0.3	G	A	2366.25±437.99	0.07	-3.19
99	<i>DNMT1</i>	19	10251747	rs2290684	0.48	0.31	0.36	A	G	1004.17±179.32	0.07	4.26
100	<i>DNMT1</i>	19	10265248	rs2114724	0.52	0.7	0.64	T	C	781.33±153.65	0.07	-1.72
101	<i>DNMT1</i>	19	10267077	rs2228611	0.52	0.7	0.56	T	C	1347.25±264.78	0.09	-2.88
102	<i>DNMT1</i>	19	10271034	rs2241531	0.15	0.47	0.42	C	G	1478.83±256.32	0.13	4.53
103	<i>DNMT1</i>	19	10271141	rs11672909	0.14	0.43	0.38	A	C	1289.33±234.49	0.09	3.86
104	<i>DNMT1</i>	19	10273372	rs2228612	0.14	0.42	0.34	T	C	995.33±165.05	0.11	-4.41
105	<i>CALR</i>	19	13054781	rs1049481	0.62	0.81	0.78	G	T	799.92±146.74	0.03	-0.35
106	<i>U2AF2</i>	19	56185250	rs664684	0.74	0.46	0.57	G	A	759.67±125.97	0.06	-0.31
107	<i>ASXL1</i>	20	30954295	rs2295454	0.42	0.78	0.71	A	G	1693.83±394.32	0.09	1.1
108	<i>ASXL1</i>	20	31019024	rs2295765	0.84	0.81	0.75	C	T	1602.33±418.93	0.04	2.29
109	<i>ASXL1</i>	20	31024274	rs4911231	0.42	0.78	0.71	T	C	1624.42±392.76	0.09	-3.7
110	<i>GNAS</i>	20	57478807	rs7121	0.54	0.65	0.55	C	T	1911.33±357.11	0.09	1.99
111	<i>SF3A1</i>	22	30738161	rs9608885	0.66	0.76	0.79	C	T	1421.17±257.06	0.04	1.81
112	<i>EP300</i>	22	41551039	rs20552	0.66	0.81	0.77	T	A	2483.08±441.59	0.09	-2.84
113	<i>EP300</i>	22	41568480	rs2076577	0.61	0.59	0.63	T	C	1192.00±203.00	0.07	-1.98
114	<i>EP300</i>	22	41569609	rs2076578	0.3	0.47	0.54	C	T	892.17±197.55	0.04	4.73
115	<i>ZRSR2</i>	X	15836648	rs5936062	0.53	0.65	0.55	T	G	706.17±197.27	0.09	-3.17
116	<i>BCOR</i>	X	39932907	rs6520618	0.25	0.7	0.58	T	C	877.92±247.79	0.09	-5.68
117	<i>KDM6A</i>	X	44929077	rs2230018	0.13	0.39	0.38	C	A	1352.92±343.34	0.06	0.33
118	<i>KDM6A</i>	X	44938563	rs20539	0.25	0.32	0.37	G	A	1092.42±289.42	0.08	-0.35
119	<i>SMC1A</i>	X	53449568	rs1264011	0.52	0.53	0.43	G	A	571.92±157.58	0.10	-1.72
120	<i>ATRX</i>	X	76937963	rs3088074	0.38	0.45	0.46	G	C	1812.75±515.93	0.10	-2.3
121	<i>ATRX</i>	X	76940534	rs35268552	0.37	0.46	0.46	A	G	846.50±231.84	0.06	4.35

Chr, chromosome; KRGDB, Korean Reference Genome Database; Ref, reference sequence; Alt, alternative sequence; BE, Background error; ME, Measurement

error