

Table S1. Clinicopathologic characteristics of the study populations

Characteristics	Discovery	Replication
<i>N</i> of patients	458	185
Age at diagnosis		
Median, years (IQR)	66 (61-70)	66 (61-70)
PSA at diagnosis, <i>N</i> (%)		
Median, ng/mL (IQR)	11.1 (7.1-17.5)	11.0 (6.9-18.7)
≤ 20	347 (79.0)	131 (76.2)
>20	92 (21.0)	41 (23.8)
Pathologic Gleason score, <i>N</i> (%)		
2-6	160 (35.3)	72 (39.8)
7-10	293 (64.7)	109 (60.2)
Pathologic stage, <i>N</i> (%)		
1	59 (13.1)	25 (13.9)
2	247 (54.9)	102 (56.7)
3	134 (29.8)	47 (26.1)
4	10 (2.2)	6 (3.3)
Lymph node metastasis, <i>N</i> (%)		
Negative	433 (95.6)	178 (97.8)
Positive	20 (4.4)	4 (2.2)
Biochemical recurrence, <i>N</i> (%)	184 (40.2)	90 (48.6)
Median follow-up, months	54	74

Abbreviations: IQR, interquartile range; PSA, prostate-specific antigen.

Table S2. Genotyped SNPs and the *P* values of their association with BCR after RP

Gene	SNP ID	Chromosome	Position	MAF	HWE	BCR		
						Additive	Dominant	Recessive
<i>CD19</i>	rs2070961	16	28938152	0.211	0.751	0.878	0.231	–
<i>CD1B</i>	rs3181082	1	158332703	0.353	1.000	0.053	0.045	0.314
<i>CD1C</i>	rs76926515	1	158273263	0.054	0.204	0.155	0.030	–
<i>CD3D</i>	rs3212264	11	118345519	0.445	0.810	0.171	0.385	0.164
<i>CD3E</i>	rs7928058	11	118300524	0.270	0.301	0.201	0.185	0.581
<i>CD3E</i>	rs7480736	11	118301649	0.470	0.896	0.114	0.136	0.275
<i>CD3E</i>	rs2231440	11	118304724	0.198	0.676	0.569	0.487	–
<i>CD3G</i>	rs1561966	11	118350759	0.436	0.962	0.429	0.883	0.206
<i>CD5</i>	rs616340	11	61108829	0.081	0.354	0.546	0.470	–
<i>CD8A</i>	rs1051386	2	86784950	0.182	0.382	0.626	0.438	–
<i>CD8A</i>	rs13023213	2	86794820	0.074	0.523	0.336	0.367	–
<i>FLT3</i>	rs2491218	13	28029904	0.259	0.381	0.202	0.243	0.428
<i>FLT3</i>	rs2491239	13	28039007	0.139	0.762	0.101	0.146	–
<i>FLT3</i>	rs1933437	13	28050157	0.240	0.819	0.276	0.287	0.577
<i>FLT3</i>	rs9554229	13	28065112	0.164	0.222	0.840	0.920	–
<i>FLT3</i>	rs1320534	13	28067397	0.186	0.112	0.416	0.695	–
<i>ITGA5</i>	rs1270919	12	54410188	0.105	0.830	0.829	0.781	–
<i>MS4A1</i>	rs4939362	11	60455545	0.353	0.770	0.882	0.658	0.713

Abbreviations: SNP, single nucleotide polymorphism; BCR, biochemical recurrence; RP, radical prostatectomy; MAF, minor alleles frequency; HWE, Hardy-Weinberg equilibrium.

P values for log-rank test.

P < 0.05 is in boldface.

Table S3. Regulatory annotation of variants linked with *CD1B* rs3181082

Chromosome	Position	LD (r ²)	SNP ID	Reference allele	Alternate allele	ASN frequency	Promoter histone marks	Enhancer histone marks	DNase	Proteins bound	Motifs changed	GRASP QTL hits	Selected eQTL hits	dbSNP function annotation
1	158264494	0.81	rs80312173	T	C	0.35					Bcl6b,HDAC2,Ik-2,Mef2			6.2kb 3' of CD1A
1	158268712	0.81	rs201631500	CGGGGG	C AGGGGG	0.38					AP-1,CAC-binding-protein,CCNT2,CHD2,E2F,EWSR1-FLI1,Egr-1,Ets,MAZ,MZF1::1-4,Myc,NRSF,PU.1,Pax-4,Pou2f2,RREB-1,SP1,STAT,Sp4,TATA,TFII-I,UF1H3BETA,VDR,W T1,YY1,ZNF219,ZNF263,Zfp281,Zfp740			10kb 3' of CD1A
1	158275041	0.87	rs61818716	C	G	0.36		BLD, THYM	ESDR,I PSC,BL D,BLD, BLD		Mxi1,RFX5			15kb 5' of CD1C
1	158277108	0.93	rs41516545	T	C	0.37								13kb 5' of CD1C
1	158280010	0.93	rs12565919	T	A	0.36		BLD			CEBPB,CEBPD			9.8kb 5' of CD1C
1	158293976	0.95	rs3138107	A	T	0.37		BLD, THYM			HDAC2,Pou1f1,Pou2f2,Pou5f1			CD1C 3'-UTR
1	158294366	0.95	rs77773003	G	A	0.37		BLD			NF-E2			CD1C 3'-UTR
1	158313118	0.95	rs77702869	TC	T	0.37		BLD			Foxa,GATA,HDAC2,Hl x1,Ik-2,Nanog,Nkx6-1,Pou2f2,Sox,XBP-1			15kb 3' of CD1B
		0.94	rs150645844	A	G	0.36					CDP,Hbp1,Sox,TCF4			12kb 3' of CD1B
1	158318802	0.82	rs146320976	C	T	0.34					GR			9.1kb 3' of CD1B
1	158319920	0.93	rs61818723	C	T	0.37					Nanog			8kb 3' of CD1B
1	158324728	1	rs16840093	A	C	0.37	BLD	BLD			CIZ,PPAR		1 hit	3.2kb 3' of CD1B
1	158325219	1	rs1321646	C	T	0.37		BLD				1 hit	1 hit	2.7kb 3' of CD1B
1	158328170	1	rs16840096	C	T	0.37	THYM, BLD	BLD			AIRE,Evi-		1 hit	CD1B 3'-UTR

1	158330516	1	rs962879	G	C	0.37	THYM, BLD	BLD	THYM	1,Foxm1,HNF6,Pbx-1,Pbx3	1 hit	1 hit	CD1B intronic
1	158332703	1	rs3181082	C	T	0.37	THYM, BLD	BLD		SZF1-1		1 hit	1.2kb 5' of CD1B
1	158336540	0.97	rs61818724	C	G	0.38		BLD	ESC,IPS	E2A,NF-Y			5kb 5' of CD1B
1	158336678	0.99	rs61818725	T	C	0.37		BLD	C	Hsf			5.1kb 5' of CD1B
1	158338893	0.99	rs12566915	C	G	0.37				Pbx3,Zec			7.4kb 5' of CD1B
1	158339625	0.99	rs114638986	G	A	0.37			IPSC				8.1kb 5' of CD1B
1	158340837	0.95	rs145921349	A	G	0.37				CDP,DMRT5,DMRT7			9.3kb 5' of CD1B
1	158341489	0.97	rs143007912	C	T	0.37				E2F,Irf,Pbx3,SP1			10kb 5' of CD1B
1	158341998	0.98	rs76638901	T	C	0.37				Brachyury,GR,Pax-4,Pax-8,RBP-Jkappa			10kb 5' of CD1B
1	158346134	0.91	rs2317955	G	T	0.37				BRCA1,Fox,Foxa,Foxd3,Foxi1,Foxj1,Foxj2,Foxl1,Foxp1,GR,Pou5f1,REB-1	1 hit		7.3kb 5' of CD1E
1	158346846	0.91	rs61818727	A	T	0.37							6.6kb 5' of CD1E
1	158357108	0.87	rs61818738	T	C	0.37	THYM		THYM	Foxp3,Hand1,Smad3,Smad			CD1E 3'-UTR