

DNA Methylation Array Analysis Identifies Profiles of Blood-derived DNA Methylation Associated with Bladder Cancer

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Data Supplement

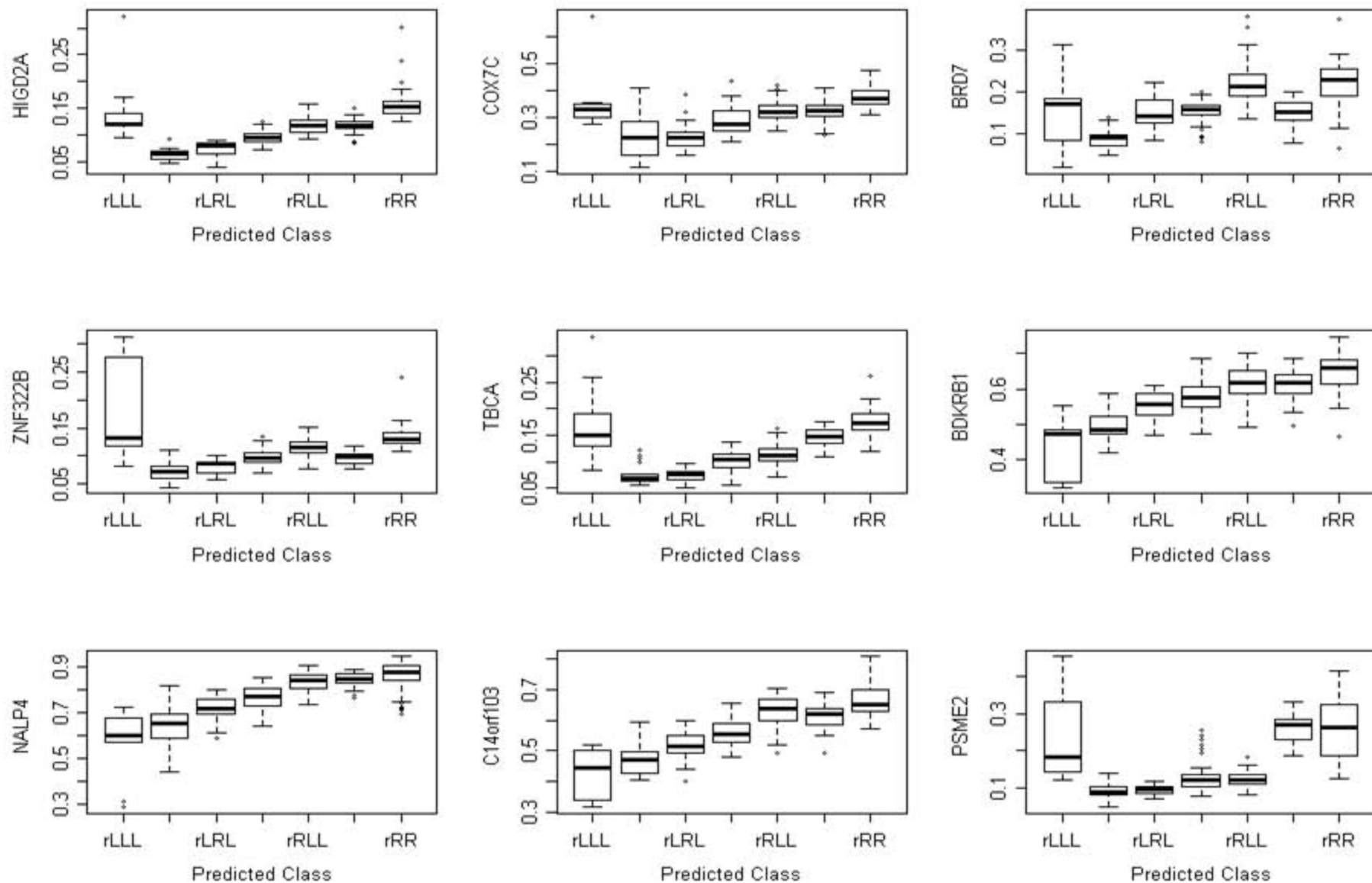
Supplemental Figure Legends

Supplemental Figure 1. Boxplots of methylation values by class for each of the 9 loci selected for the panel within the testing data. Dark horizontal lines represent the mean, with the box representing the 25th and 75th percentiles, the whiskers the 5th and 95th percentiles, and outliers represented by dots.

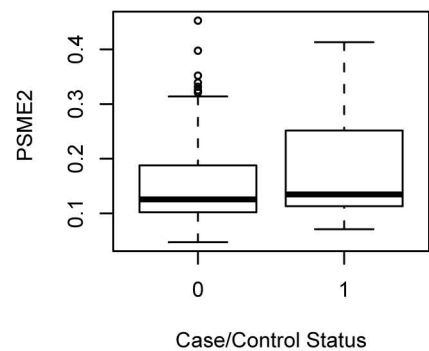
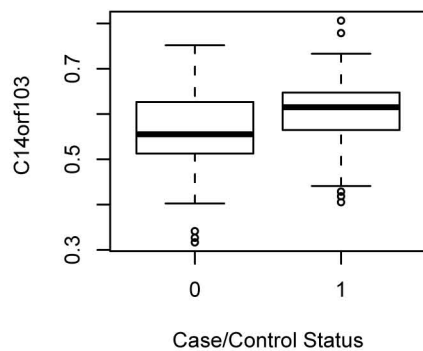
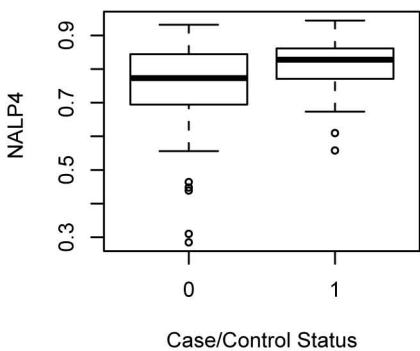
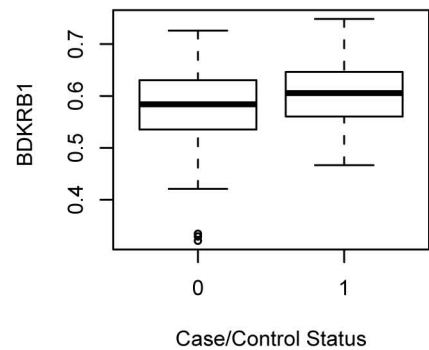
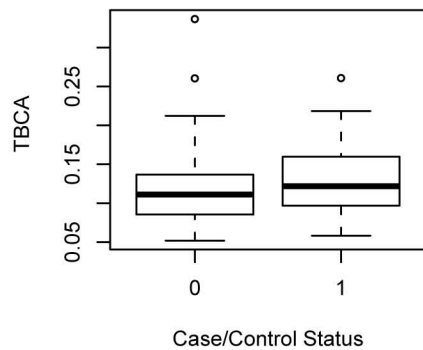
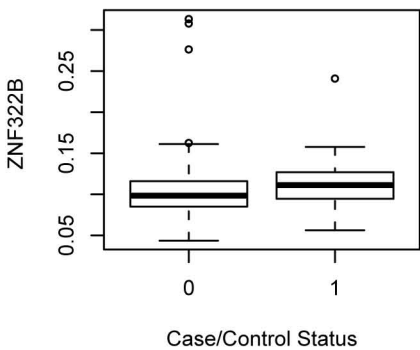
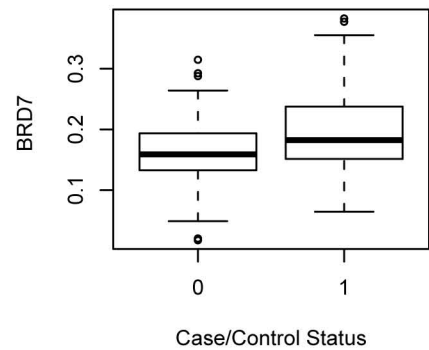
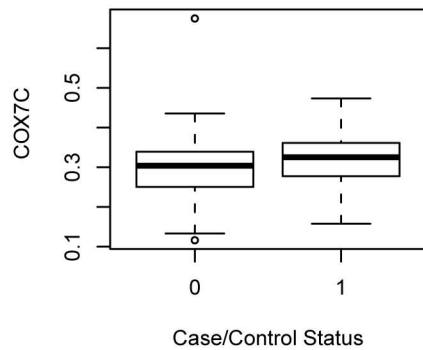
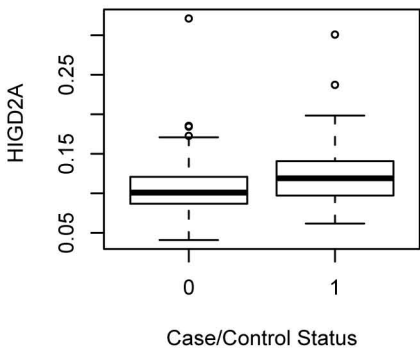
Supplemental Figure 2. Boxplots of methylation values of each of the loci in the testing data in controls (0) and cases (1). Dark horizontal lines represent the mean, with the box representing the 25th and 75th percentiles, the whiskers the 5th and 95th percentiles, and outliers represented by dots.

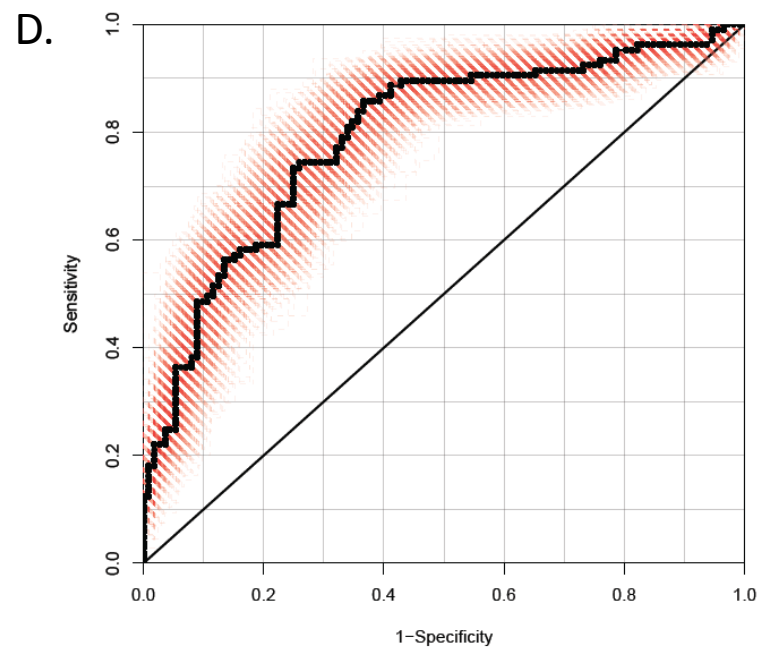
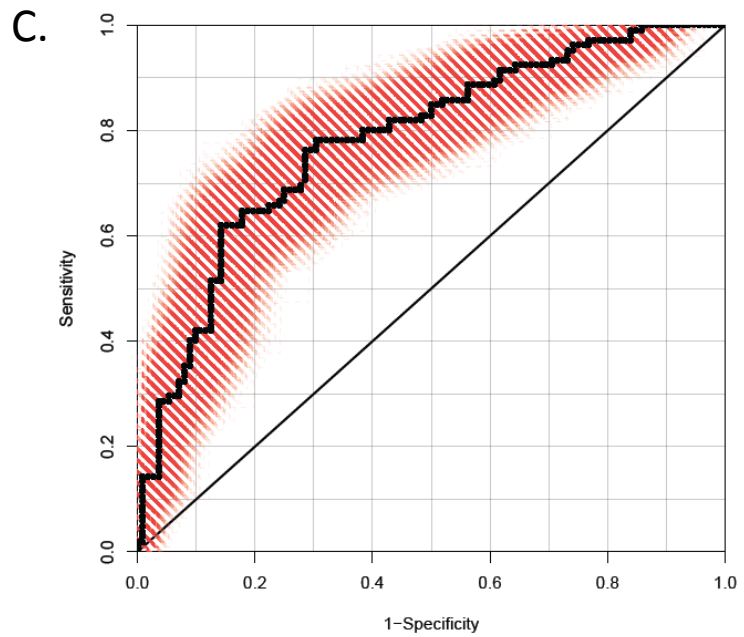
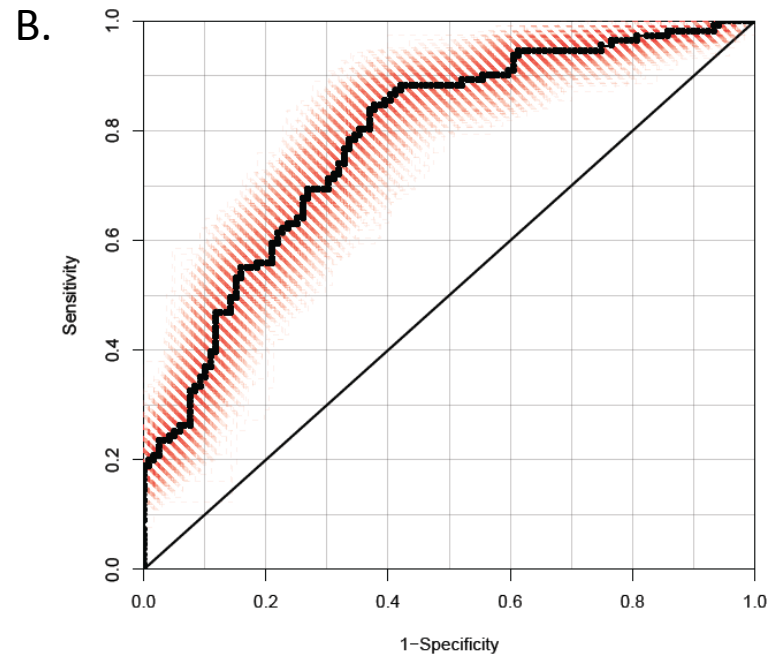
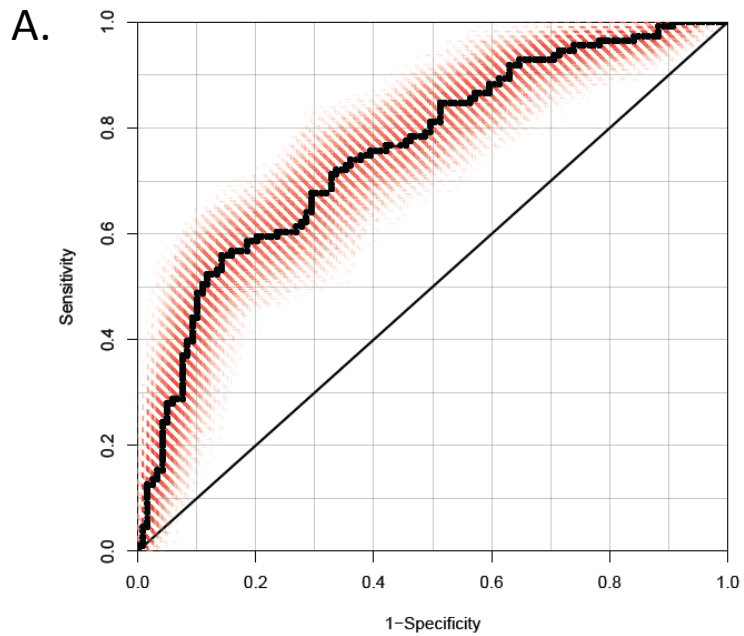
Supplemental Figure 3. Receiver operator curve (ROC) analysis of methylation-based bladder cancer prediction using LASSO method. (A) ROC based on a model fit using the 1000 most variable loci. (B) ROC based on a model fit using the 1000 loci most strongly associated with bladder cancer status. (C) ROC based on a model fit using the 1000 most variable and controlled for patient age, gender, smoking status, and family history of bladder cancer. (D) ROC based on a model fit using the 1000 loci most strongly associated with bladder cancer status and controlled for patient age, gender, smoking status, and family history of bladder cancer. Shaded areas represent bootstrap-derived 95% confidence intervals.

Supp Fig. 1



Supp. Fig 2.





Supplementary Table 1. Characteristics of the subjects in the training and Testing Sets

Characteristic	Training Set		Testing Set	
	Controls	Cases	Controls	Cases
Total n	118	112	119	111
Subject Age (yrs), median (range)	65 (28-74)	66 (29-74)	65 (32-74)	66 (25-74)
Gender , n(%)				
Male	79 (48)	86 (52)	79 (48)	85 (52)
Female	39 (60)	26 (40)	40 (61)	26 (39)
Smoking History				
Never	36 (64)	20 (36)	36 (64)	20 (36)
Former	62 (53)	55 (47)	64 (53)	56 (47)
Current	20 (35)	37 (65)	19 (35)	35 (65)

*Data on family history not available on 13 subjects

Supplementary Table 2. Odds Ratios and 95% Confidence Intervals for Bladder Cancer for Pairwise Comparisons of Each Class.

		95% CI	
Contrast	OR	Lower	Upper
rLLR vs rLLL	0.69	0.09	5.08
rLRL vs rLLL	1.75	0.28	11.15
rLRR vs rLLL	1.30	0.22	7.51
rRLL vs rLLL	5.97	1.03	34.48
rRLR vs rLLL	4.53	0.71	28.95
rRR vs rLLL	8.71	1.46	52.15
rLRL vs rLLR	2.54	0.59	10.92
rLRR vs rLLR	1.88	0.51	6.88
rRLL vs rLLR	8.64	2.36	31.68
rRLR vs rLLR	6.55	1.54	27.97
rRR vs rLLR	12.62	3.22	49.38
rLRR vs rLRL	0.74	0.25	2.23
rRLL vs rLRL	3.41	1.14	10.21
rRLR vs rLRL	2.58	0.73	9.14
rRR vs rLRL	4.97	1.55	15.96
rRLL vs rLRR	4.59	1.92	10.96
rRLR vs rLRR	3.48	1.19	10.21
rRR vs rLRR	6.70	2.55	17.61
rRLR vs rRLL	0.76	0.26	2.18
rRR vs rRLL	1.46	0.56	3.79
rRR vs rRLR	1.92	0.63	5.86

Note: All reported odds-ratio computations were controlled for age, gender, smoking status, and family history of disease.

Supplementary Table 3. Loci Utilized in LASSO-based Bladder Cancer Prediction Models.

Model 1 - Based on 1000 most variable loci		Model 2 - Based on 1000 loci most associated with case status			
CpGName	Gene Symbol	CpGName	Gene Symbol	CpGName	Gene Symbol
cg03606258	GNAS	cg25307081	BRD7	cg11159299	GZMM
cg15383120	DUSP22	cg10238171	BDKRB1	cg06572974	CHD2
cg17267907	DEFA1	cg07081888	NALP4	cg14178895	C6orf105
cg03962522	SLC5A1	cg20118424	ABCB11	cg20179697	SNX9
cg17003970	CHFR	cg01605517	AHCTF1	cg01450842	SALF
cg09748975	MSX1	cg13064571	C8orf44	cg23352030	PRIC285
cg15720535	AGPAT2	cg13442811	KIAA1128	cg04151683	LRRN6C
cg16192575	PTPN20B	cg23196557	FLJ44691	cg13944141	PRSS2
cg05358404	RTEL1	cg18236721	C9orf26	cg25345738	PWP1
cg15915418	TLE1	cg20630386	AFP	cg01346718	CSNK1E
cg08585897	TERF2IP	cg20366832	LLGL2	cg19573166	SLC22A17
cg20389709	KLF11	cg18156583	IL18RAP	cg09076584	FLJ25006
cg15584813	SLC38A4	cg26755793	KCTD1	cg13628514	TRPV4
cg23629496	C20orf75	cg15339605	TFEC	cg13149996	EIF4G3
cg16547341	USP29	cg02169430	CHD2	cg27094188	EIF2C1
cg10157098	NYD-SP18	cg03536003	TMPRSS11D	cg13383491	GPR85
cg08471713	MEOX1	cg17099569	GLI2	cg11833861	TMEM98
cg27120999	HSPA2	cg11503011	EBF	cg25374854	ABR
cg23065097	FKBP1B	cg04039397	CD96	cg03605761	RNF126
cg13334277	SPACA1	cg22730004	SPTA1	cg21602520	BCL2
cg10669058	CILP2	cg17687883	MTHFD2	cg24133080	RGS18
cg17687883	MTHFD2	cg27394566	PLD4	cg02214188	BDH2
cg06572974	CHD2	cg00136405	IL21	cg17895149	PLAGL1
cg04155793	CDK10	cg00461841	ATF7IP2		
cg20118424	ABCB11	cg16519742	ZIM2		
cg24993443	SNRPN	cg11220060	KLF1		
cg19319069	UBE2H	cg19356189	KLK10		
cg20066612	KCNJ9	cg26149550	KLK15		
cg16005224	SLC5A8	cg19399100	UGT2A1		
cg14576824	RPS6KC1	cg05507459	C9orf121		
cg05696092	NOSIP	cg05026186	ABLIM3		
cg06258834	KLK7	cg08972170	Ells1		
cg23606079	CRISPLD2	cg08471713	MEOX1		
cg20615832	PF4V1	cg19646028	C19orf30		
cg03032025	CPEB4	cg04790874	CD79A		
cg03605761	RNF126	cg19319069	UBE2H		
cg16519742	ZIM2	cg13246269	AQP7		
cg17103109	HLA-DOB	cg23216015	C7orf16		
cg18474934	TRPC3	cg25084878	FBN2		
cg23713742	SPAG4	cg15129294	CCL4L2		
cg24642468	MGC33367	cg24417499	HPCA		
cg16907488	CCDC17	cg05719902	LOC136306		
cg15129294	CCL4L2	cg27425675	DEXI		
cg22401066	SMPDL3A				
cg15528736	FCGRT				
cg11473104	NUDT15				
cg12331980	FLJ39502				
cg08920071	IGSF2				