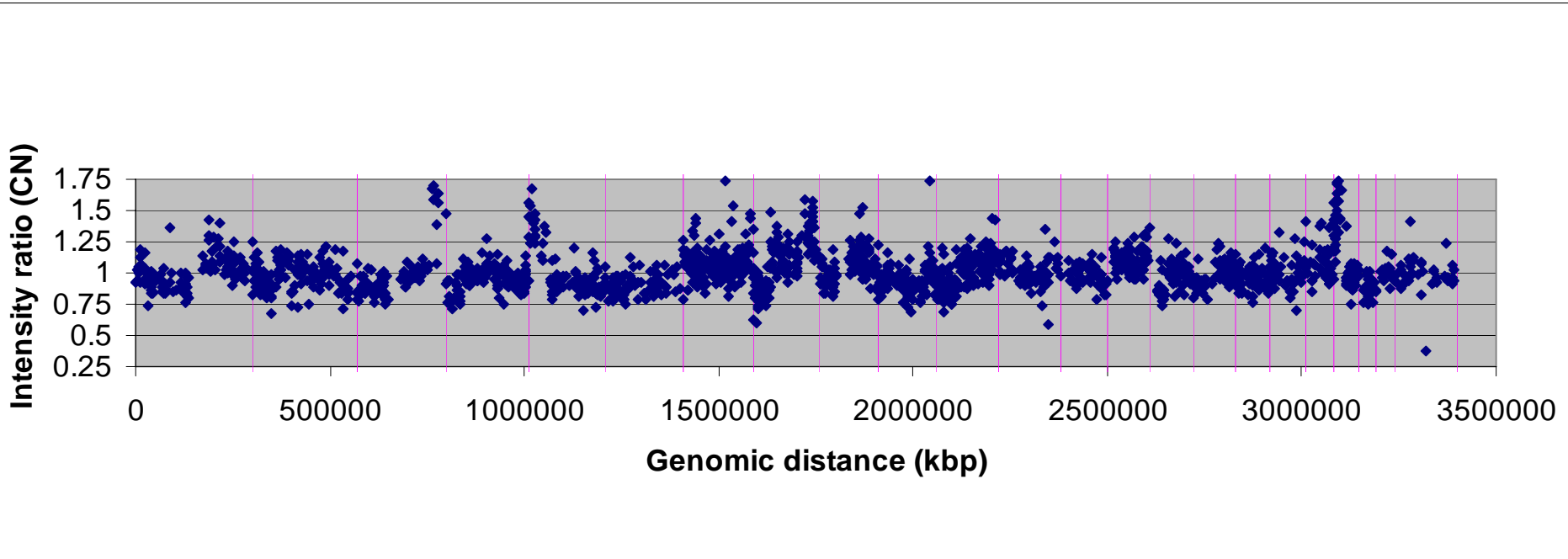


**Smoking-Related Genomic Signatures in Non-Small Cell Lung Cancer**

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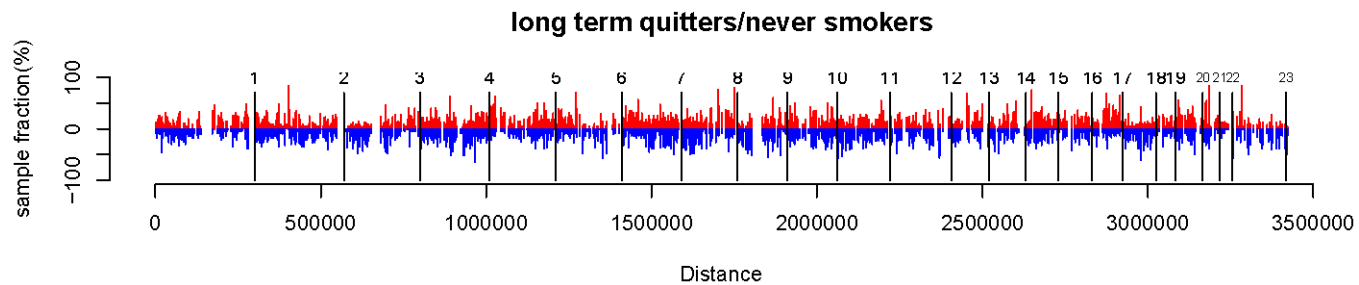
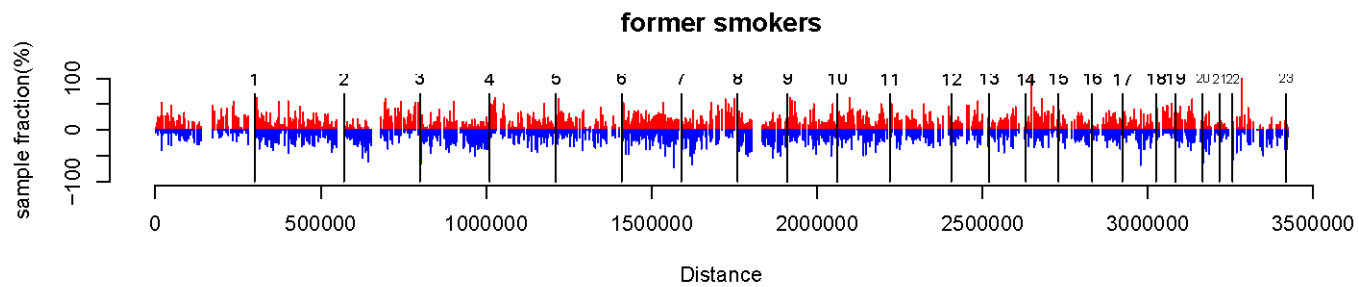
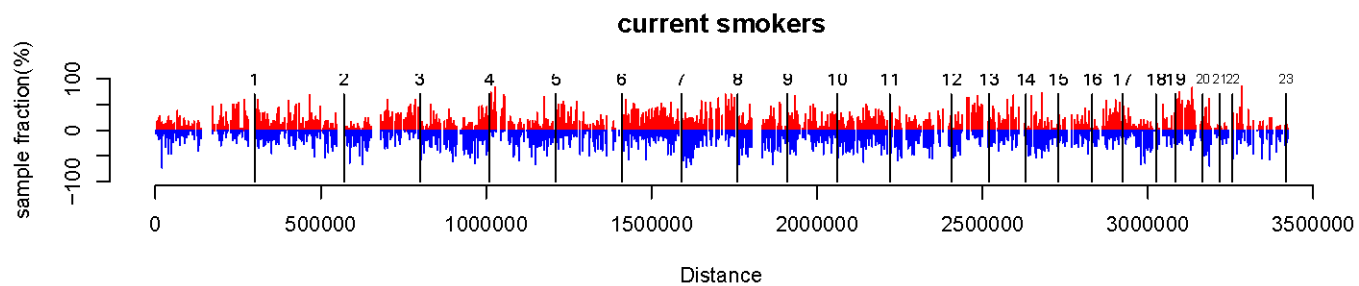
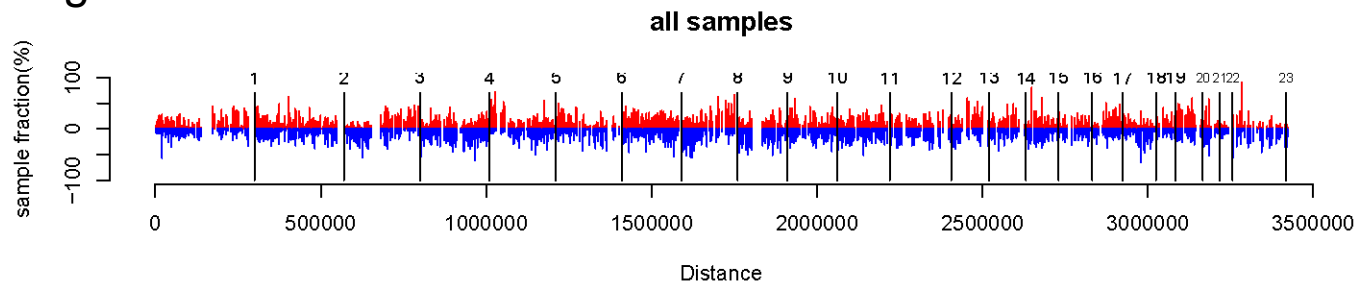
Online Data Supplement

Supplement Figure 1.



Array CGH analysis. Representative genomic profile of a squamous carcinoma of the lung tested against sex-matched normal DNA. Chromosomal boundaries are indicated by vertical lines. Genomic distances are presented in kbp. Each data point is presented as mean of 3 analytical replicates.

# Supplement Figure 2.



Supplement Table 1. Average Variability across BAC clones by Smoking status.

Genomic Alteration	Smoking Status	Average Variability ( %)	SD	P-values for pairwise comparison between smoking status		
				1 vs 2	1 vs 3	2 vs 3
Amplification	1	14.9	14.46	< 0.001	< 0.001	
	2	12.7	12.22			< 0.001
	3	12.0	11.39			
Deletion	1	14.9	13.37	< 0.001	< 0.001	
	2	12.1	11.06			0.271
	3	12.4	11.13			
No Gain or Loss	1	71.5	18.27	< 0.001	< 0.001	
	2	76.2	16.37			0.058
	3	76.6	16.06			

Note : P-values were calculated from permutation test of Wilcoxon signed-rank test.  
 Group 1, current smoker; 2, former smokers; 3, never smokers and long term quitters.

Supp Table 2. Candidate genes within genomic regions associated smoking history in lung cancer.								smk1vs3	smktrend	pky	FDR
# BACs	BAC clone ID	CHR	FISH	Gain/Loss in Smokers	Closest Fragile site	300kb surrounding region	Candidate genes				
1	RP11-137M19	1	1q21-22	Gain	1q21	chr1:155,796,124-156,096,124	CD5L, DARC, CADM3, AIM2, FCRL1, FCRL2, FCRL3, FCRL4		X		0.033
2	RP11-4J2	1	1q23	Gain	1q21	chr1:173,869,989-174,169,989	TNR, ASTN, FAM5B	X	X		0.018
3	RP11-67G7	2	2q32.1	Gain	2q32.1	chr2:182,730,708-183,030,708	PDE1A, PPP1R1C		X		0.031
4	RP11-71H20	2	2q36-2q37	Loss	2q37.3	chr2:231,915,417-232,215,417	C2orf57, NMUR1, C2orf52, NCL, B3GNT7, ARMC9	X	X		0.019
5	RP4-690P14	3	3p21.31	Loss	3q24	chr3:49,200,725-49,500,725	DAG1, NICN1, AMT, TCTA, RHOA, GPX1, USP4, C3orf62, CCDC36, LOC646498		X		0.031
6	CTB-110J24	3	3p25-p26	Loss	3p24.2	chr3:10,012,960-10,312,960	GHRL, TATDN2, IRAK2, VHL, C3orf10, C3orf24, FANCD2, LOC401052		X		0.024
7	RP11-220G20	3	3q13.3	Gain	3q13.2	chr3:118,554,507-118,854,507		X	X		0.033
8	RP11-59J16	3	3q21	Gain	3p24	chr3:128,525,760-128,825,760	MCM2, GPR175	X	X		0.024
9	RP11-166D18	3	3q23	Gain	3q25	chr3:140,869,489-141,169,489	CLSTN2, NMNAT3			X	0.03
10	RP11-203L15	3	3q25-3q26.1	Gain	3q25	chr3:161,851,141-162,151,141	PPM1L, ARF7, TRIM59, KPNA4, SMC4, PPM1L	X	X	X	0.017
11	RP11-118C24	4	4p15.2	Loss	4p15	chr4:25,106,258-25,406,258	KIAA0746, ANAPC4, SLC34A2	X	X		0.024
12	CTD-2224I19	4	4p16.3	NA	4p16.1	chr4:1,722,829-2,022,829	WHSC2, WHSC1, LETM1, FGFR3			X	0.042
13	RP11-203L17	4	4q35.2	Loss	4q31.1	chr4:186,566,474-186,866,474	SORBS2, C4orf20, ANKRD37, LRP2BP, SNX25, PDLIM3, CCDC110, LOC441054, UFSP2		X		0.024
14	CTD-2006C10	5	5q12	Loss	5q15	chr5:64,746,411-65,046,411	SGTB, C5orf44, TRIM23, PPWD1, CENPK, ADAMTS6	X	X		0.029
15	CTD-2113P14	5	5q13.1	Loss	5q15	chr5:68,354,015-68,654,015	CCDC125, CDK7, MRPS36, CENPH, CCNB1, SLC30A5			X	0.03
16	CTD-2113L13	5	5q31	Loss	5q31.1	chr5:137,680,991-137,980,991	JMJD1B, REEP2, ETF1, EGR1, FAM53C, CDC25C, GFRA3, CDC23, KIF20A, BRD8, NME5	X	X	X	0.002
17	CTD-2262N19	5	5q34	Loss	5q35	chr5:176,338,823-176,638,823	NSD1, FGFR4, ZNF346, UIMC1	X	X		0.002
18	RP11-51D11	5	5q35	Loss	5q35	chr5:178,962,744-179,262,744	TBC1D9B, HNRPH1, C5orf45, SQSTM1, MGAT4B, LTC4S, MAML1, CANX, HNRNP11, RUFY1		X		0.022
19	RP11-52M17	7	7p13	Loss	7p13	chr7:44,223,496-44,523,496	NPC1L1, OGDH, TMED4, DDX56, LOC644907, NUDCD3, CAMK2B		X		0.034
20	CTB-51J22	7	7q11.23c	Loss	7q11	chr7:72,754,023-73,054,023	WBSCR28, EIF4H, ELN, LIMK1, WBSCR27, CLDN4, CLDN3, ABHD11, STX1A		X		0.024
21	CTC-332K22	7	7q11.23f-q11.23g	Loss	7q11	chr7:75,487,089-75,787,089	HSPB1, ZP3, SRCRB4D, YWHAG, HSBP1, FLJ37078, MDH2, STYXL1		X		0.022
22	GS1-216H24	7	7qtel	Gain	7q36	chr7:158,580,712-158,880,712				X	0.039
23	RP11-262B7	8	8p23.1	Loss	8p23.1	chr8:11,600,294-11,900,294	DEFB134, DEFB136, DEFB137, CTBS, FDT1, NEIL2, GATA4	X	X		0.002
24	RP11-24C23	8	8q24.1	Gain	8q24.1	chr8:118,887,013-119,187,013	EXT1		X		0.033
25	CTD-2280C3	9	9q34.2	Loss	9q32	chr9:129,514,573-129,814,573	FAM102A, FNBP1, USP20, TOR1A, TOR1B, PTGES, PRRX2, DPM2, PIP5K1L1, ST6GALNAC4, ST6GALNAC6, AK1, ENG, FPGS, CDK9, SH2D3C, TOR2A, TTC16, PTRH1, C9		X		0.027
26	RP11-56E13	11	11p11.2	Loss	11p13	chr11:47,898,976-48,198,976	OR4B1, PTPRJ		X		0.033
27	RP11-548G17	11	11q13.1	Loss	11q13.1	chr11:64,403,628-64,703,628	SPDYC, SYVN1, MRPL49, FAU, ZNHIT2, TM7SF2, C11orf2, ZFPL1, CDCA5, NAALADL1, SAC3D1, SNX15, ARL2, BATF2, LOC283129, GPHA2, PPP2R5B, ATG2A		X		0.031
28	CTD-2042H22	12	12q13.3	Loss	12q13.1	chr12:54,621,777-54,921,777	ANKRD52, SLC39A5, OBF2C2, RNF41, SMARCC2, MYL6, MYL6B, FAM62A, ZC3H10, RPL41, PA2G4, ERBB3, LOC728937, RPS26, IKZF4, SUOX, RAB5B, CDK2, S	X	X		0.002
29	CTD-227E11	15	15q22.1	Loss	15q22.1	chr15:89,125,326-89,425,326	VPS33B, PRC1, RCCD1, HDDC3, UNC45A, MAN2A2, FES, FURIN, BLM	X	X	X	0.002
30	GS-127C11	16	16p13.11	Loss	16p13.11	chr16:15,992,749-16,292,749	NOMO3, ABCC6, ABCC1			X	0.03
31	RP11-253O10	16	16q23	Loss	16q23.2	chr16:73,951,276-74,251,276	TERF2IP, KARS, ADAT1, GABARAPL2, FLJ22167, CHST5, CHST6, TMEM170A, CFDP1	X	X	X	0.022
32	CTB-110Z3	17	17p13.3	Loss	17p13.3	chr17:2,530,493-2,830,493	GARNL4, KIAA0664, PAFAH1B1		X		0.019
33	GS-64G5	17	17p13.3	Loss	17p12	chr17:2,084,568-2,384,568	METT10D, RUTBC1, LOC284009, MNT, SGSM2, TSR1, SRR, SMG6		X		0.033
34	RP5-1073F15	17	17q23.2	Loss	17q23.1	chr17:55,203,895-55,503,895	HEATR6, RNFT1, RPS6KB1, TUBD1, TMEM49		X		0.033
35	CTD-164O19	19	19p13.2	Loss	19p13	chr19:10,833,279-11,133,279	DOCK6, SPBC24, KANK2, SPC24, LDLR, SMARCA4, C19orf52, YIPF2, CARM1		X		0.016
36	RP11-17I20	19	19q13.3	Loss	19q13	chr19:53,707,778-54,007,778	BCAT2, FGF21, FUT1, IZUMO1, RASIP1, FLJ36070, FUT2, LOC126147, CA11, DBP, SPHK2, RPL18, SPACA4, FAM83E, SULT2B1, LMTK3		X		0.019
37	RP11-87L13	19	19q13.4	Loss	19q13	chr19:60,575,384-60,875,384	U2AF2, CCDC106, ZNF581, ZNF580, ZNF784, ZNF524, FIZ1, ZNF579, LOC646643, NAT14, ZNF628, ISOC2, UBE2S, RPL28, TMEM190		X		0.027
38	CTD-2042A23	20	20q12	NA	20p11.23	chr20:39,094,426-39,394,426	ZHX3, PLCG1, TOP1			X	0.03
39	CTD-2236H16	23	Xq22.1	Loss	Xq22.1	chrX:100,480,943-100,780,943	ARMCX3, ARMCX6, ARMCX1, HNRNP28, GLA, RPL36A, BTK, TIMM8A	X			0.048
40	RP11-102O20	18	18p11.22	NA	18q12.2	chr18:9,868,595-10,168,595	VAPA, TXNDC2	X			0.048
41	RP11-105C15	18	18p11.31	Gain	18q12.2	chr18:5,837,092-6,137,092	L3MBTL4, TTMA	X			0.048
42	RP11-123E5	7	7p21.1	Loss	7p22	chr7:17,471,664-17,771,664		X			0.048
43	RP11-127F3	7	7q21.3	NA	7q21.2	chr7:94,810,748-95,110,748	PDK4, ASB4, PON2, PON3	X		X	0.048
44	RP11-128P9	8	8q24.22	Gain	8q24.3	chr8:133,298,821-133,598,821	KCNQ3	X			0.039
45	RP11-135N5	17	17p13.3	Loss	17p12	chr17:2,252,100-2,552,100	KIAA0664, PAFAH1B1, METT10D, LOC284009	X			0.016
46	RP11-14K13	5	5q31.3	Loss	5q31.1	chr5:141,563,246-141,863,246	SPRY4	X			0.048
47	RP11-15M15	20	20q13.2	Gain	20p11.23	chr20:51,038,260-51,338,260	TSHZ2	X			0.016
48	RP11-198G24	3	3q26.1	Gain	3q27	chr3:165,227,386-165,527,386		X			0.048
49	RP11-257O17	10	10q26.12	Gain	10q26.1	chr10:122,233,276-122,533,276	PPAPDC1A	X			0.048
50	RP11-279L16	3	3p24.3	Loss	3p24.2	chr3:15,063,521-15,363,521	SH3BP5, CAPN7, ZFYVE20, MRPS25, NR2C2	X			0.048
51	RP11-284P8	12	12q24.32	Gain	12q24.2	chr12:125,591,353-125,891,353		X			0.048
52	RP11-29H19	20	20q13.12	Gain	20p11.23	chr20:41,936,265-42,236,265	JPH2, TOX2	X			0.048
53	RP11-329O10	2	2q33.1	Loss	2q33	chr2:203,223,980-203,523,980	ALS2CR8, WDR12, ICA1L, ALS2CR13	X			0.048
54	RP11-42M12	5	5q23.2	Loss	5q31.1	chr5:127,102,362-127,402,362		X			0.021
55	RP11-44N11	8	8q24.13	Gain	8q24.1	chr8:123,748,206-124,048,206	ZHX2	X			0.048
56	RP11-45B19	8	8q24.22	Gain	8q24.3	chr8:135,508,723-135,808,723	ZFAT, ZFAT1	X			0.048
57	RP11-46O13	7	7q21.13	Gain	7q21.2	chr7:88,154,518-88,454,518	MGC26647, ZNF804B	X			0.048
58	RP11-51G15	10	10q26.11	Gain	10q26.1	chr10:120,440,155-120,740,155	C10orf46	X			0.048
59	RP11-56K21	19	19p13.12	NA	19p13	chr19:14,251,905-14,551,905	NDUF87, GPSN2, DNAJB1, GIPC1, PTGER1, PKN1, DDX39, CD97	X			0.048
60	RP11-85A19	11	11p11.2	Loss	11p13	chr11:47,949,945-48,249,945	OR4X1, OR4X2, OR4B1, PTPRJ	X			0.048