

Table SI. Detailed information of 201 triple-negative breast cancer samples collected from Gene Expression Omnibus and The Cancer Genome Atlas.

GSM	GSE	GPL
GSM2319862	GSE87048	GPL6801
GSM2319885	GSE87048	GPL6801
GSM2319893	GSE87048	GPL6801
GSM2319895	GSE87048	GPL6801
GSM2319904	GSE87048	GPL6801
GSM2319908	GSE87048	GPL6801
GSM2319920	GSE87048	GPL6801
GSM2319927	GSE87048	GPL6801
GSM3136982	GSE114183	GPL6801
GSM3136983	GSE114183	GPL6801
GSM3136984	GSE114183	GPL6801
GSM3136985	GSE114183	GPL6801
GSM3136986	GSE114183	GPL6801
GSM3136987	GSE114183	GPL6801
GSM3136988	GSE114183	GPL6801
GSM3136989	GSE114183	GPL6801
GSM3136990	GSE114183	GPL6801
GSM3136991	GSE114183	GPL6801
GSM3136992	GSE114183	GPL6801
GSM3136993	GSE114183	GPL6801
GSM3136994	GSE114183	GPL6801
GSM3136995	GSE114183	GPL6801
GSM3136996	GSE114183	GPL6801
GSM3136997	GSE114183	GPL6801
GSM3136998	GSE114183	GPL6801
GSM3136999	GSE114183	GPL6801
GSM3137000	GSE114183	GPL6801
GSM3137001	GSE114183	GPL6801
GSM3137002	GSE114183	GPL6801
GSM3137003	GSE114183	GPL6801
GSM3137004	GSE114183	GPL6801
GSM3137005	GSE114183	GPL6801
GSM3137006	GSE114183	GPL6801
GSM3137007	GSE114183	GPL6801
GSM3137008	GSE114183	GPL6801
GSM3137009	GSE114183	GPL6801
GSM3137010	GSE114183	GPL6801
GSM3137011	GSE114183	GPL6801
GSM3137012	GSE114183	GPL6801
GSM3137013	GSE114183	GPL6801
GSM3137014	GSE114183	GPL6801
GSM3137015	GSE114183	GPL6801
GSM3137016	GSE114183	GPL6801
GSM3137017	GSE114183	GPL6801
GSM3137018	GSE114183	GPL6801
GSM3137019	GSE114183	GPL6801
GSM3137020	GSE114183	GPL6801
GSM3137021	GSE114183	GPL6801
GSM3137022	GSE114183	GPL6801
GSM3137023	GSE114183	GPL6801
GSM3137024	GSE114183	GPL6801
GSM3137025	GSE114183	GPL6801
GSM3137026	GSE114183	GPL6801
GSM3137027	GSE114183	GPL6801
GSM3137028	GSE114183	GPL6801
GSM3137029	GSE114183	GPL6801
GSM3137030	GSE114183	GPL6801

Table SI. Continued.

GSM	GSE	GPL
GSM3137031	GSE114183	GPL6801
GSM3137032	GSE114183	GPL6801
GSM3137033	GSE114183	GPL6801
GSM3137034	GSE114183	GPL6801
GSM3137035	GSE114183	GPL6801
GSM1384583	GSE57548	GPL6801
GSM1384584	GSE57548	GPL6801
GSM1384585	GSE57548	GPL6801
GSM1384586	GSE57548	GPL6801
GSM1384587	GSE57548	GPL6801
GSM1384588	GSE57548	GPL6801
GSM1384589	GSE57548	GPL6801
GSM1384590	GSE57548	GPL6801
GSM1384591	GSE57548	GPL6801
GSM1384592	GSE57548	GPL6801
GSM1384593	GSE57548	GPL6801
GSM1384594	GSE57548	GPL6801
GSM1384595	GSE57548	GPL6801
GSM1384596	GSE57548	GPL6801
GSM1384598	GSE57548	GPL6801
GSM1384599	GSE57548	GPL6801
GSM1384601	GSE57548	GPL6801
GSM1384602	GSE57548	GPL6801
GSM1384604	GSE57548	GPL6801
GSM1384605	GSE57548	GPL6801
GSM1384607	GSE57548	GPL6801
GSM805438	GSE26232	GPL6801
GSM805440	GSE26232	GPL6801
GSM805450	GSE26232	GPL6801
GSM805455	GSE26232	GPL6801
GSM805456	GSE26232	GPL6801
GSM805457	GSE26232	GPL6801
GSM805459	GSE26232	GPL6801
GSM805466	GSE26232	GPL6801
GSM805478	GSE26232	GPL6801
GSM805482	GSE26232	GPL6801
GSM805483	GSE26232	GPL6801
GSM805484	GSE26232	GPL6801
GSM805868	GSE32530	GPL6801
GSM805871	GSE32530	GPL6801
GSM805876	GSE32530	GPL6801

Table SII. Detected significantly amplified or deleted genomic regions by GISTIC.

Type	Chromosome	Chromosome band	Genomic region	q-value	Gene(s)
Amplification	chr1	1p21.1	chr1:106002164-106022374	1.34x10 ⁻⁹	[LOC100129138]
Amplification	chr1	1p13.3	chr1:110227397-110236932	1.02x10 ⁻³⁰	GSTM1
Amplification	chr1	1q21.1	chr1:145228365-145257182	6.70x10 ⁻²⁰	NOTCH2NL
Amplification	chr1	1q21.3	chr1:152552821-152575461	5.09x10 ⁻⁶³	LCE3D, LCE3C
Amplification	chr1	1q21.3	chr1:152762668-152767863	7.30x10 ⁻³⁰	[LCE1D]
Amplification	chr1	1p31.1	chr1:72779093-72794462	2.54x10 ⁻¹³⁸	[NEGR1]
Amplification	chr10	10p15.1	chr10:5242165-6322568	1.48x10 ⁻⁵	hsa-mir-3155, CALML3, AKR1C4, GDI2, IL2RA, IL15RA, PFKFB3, NET1, CALML5, ANKRD16, FAM208B, ASB13, TUBAL3, FBXO18, RBM17, UCN3, LOC399715, MIR3155A, MIR3155B
Amplification	chr11	11p15.4	chr11:4970332-4973893	1.98x10 ⁻¹³	[OR51A4]
Amplification	chr11	11q11	chr11:55381823-55437718	6.49x10 ⁻¹⁰	OR4P4, OR4S2, OR4C6
Amplification	chr12	12p13.31	chr12:8552523-8580942	4.61x10 ⁻⁷	[LOC389634]
Amplification	chr12	12p13.33	chr12:870971-1269075	1.65x10 ⁻¹⁴	RAD52, ERC1, WNK1
Amplification	chr12	12p13.31	chr12:9620110-9697217	2.98x10 ⁻²⁵	[DDX12P]
Amplification	chr13	13q34	chr13:113757998-113836937	3.58x10 ⁻⁷	F7, F10, PROZ, PCID2
Amplification	chr14	14q32.33	chr14:106534145-106577592	2.11x10 ⁻³⁰	[ADAM6]
Amplification	chr14	14q32.33	chr14:106715331-106736924	3.95x10 ⁻²³	[LINC00226]
Amplification	chr14	14q11.2	chr14:20137347-20424925	1.60x10 ⁻⁷	OR4K5, OR11H2, OR4K1, OR4N2, OR4K2, OR4Q3, OR4M1
Amplification	chr15	15q11.1	chr15:20601771-20615848	7.52x10 ⁻¹¹	HERC2P3
Amplification	chr15	15q24.3	chr15:76891824-76895772	5.30x10 ⁻¹⁸	SCAPER
Amplification	chr16	16p11.2	chr16:33097424-33644292	0.00032884	TP53TG3, LOC390705, TP53TG3C, TP53TG3B
Amplification	chr16	16p11.1	chr16:34471299-34748704	0.00017233	LOC146481, LOC283914, LOC100130700
Amplification	chr16	16q22.2	chr16:70873102-71191339	5.16x10 ⁻¹¹	HYDIN
Amplification	chr17	17p11.2	chr17:18317396-18440960	4.31x10 ⁻¹⁴	FAM106A, USP32P2, LOC339240, LGALS9C
Amplification	chr17	17q21.2	chr17:39423028-39432944	6.86x10 ⁻⁵⁰	[KRTAP9-9]
Amplification	chr17	17q21.31	chr17:44311888-44353884	2.57x10 ⁻⁷	[KIAA1267]
Amplification	chr19	19q12	chr19:30171605-30367739	7.67x10 ⁻⁹	CCNE1, C19orf12
Amplification	chr2	2q22.3	chr2:146865080-146866908	2.46x10 ⁻⁹	[PABPC1P2]
Amplification	chr2	2p16.3	chr2:52764230-52781396	4.64x10 ⁻²⁰	[ASB3]
Amplification	chr2	2p11.2	chr2:89209200-89278082	1.85x10 ⁻⁶⁷	[MIR4436A]
Amplification	chr20	20p13	chr20:1571904-1580537	7.60x10 ⁻⁶⁵	SIRPB1
Amplification	chr22	22q11.23	chr22:24331968-24391080	3.26x10 ⁻⁸	GSTT1, GSTTP1, LOC391322, GSTTP2
Amplification	chr3	3q26.1	chr3:162508193-162530315	2.08x10 ⁻¹⁸	[LOC647107]
Amplification	chr3	3q29	chr3:192878823-192882887	1.42x10 ⁻¹⁰⁰	[HRASLS]
Amplification	chr3	3p14.1	chr3:68715460-68748945	1.98x10 ⁻¹⁵	[FAM19A4]
Amplification	chr4	4p16.1	chr4:10210391-10229950	3.97x10 ⁻²⁴	[WDR1]
Amplification	chr4	4q26	chr4:115178968-115184321	1.06x10 ⁻⁶	[ARSI]
Amplification	chr4	4p16.3	chr4:46692-69519	0.0010144	ZNF595, ZNF718

Table SII. Continued.

Type	Chromosome	Chromosome band	Genomic region	q-value	Gene(s)
Amplification	chr4	4q13.2	chr4:69413941-69451900	4.54x10 ⁻¹³	UGT2B17
Amplification	chr5	5q35.3	chr5:180374524-180417910	0.00020443	BTNL3, BTNL8
Amplification	chr5	5q11.2	chr5:57321587-57338356	5.39x10 ⁻⁵⁸	[PLK2]
Amplification	chr5	5p15.33	chr5:733614-773567	8.20x10 ⁻¹²	[ZDHHC11]
Amplification	chr6	6q16.3	chr6:103751565-103762032	1.47x10 ⁻²⁸	[GRIK2]
Amplification	chr6	6p21.32	chr6:32454524-32516928	5.26x10 ⁻⁴⁷	HLA-DRB5
Amplification	chr7	7q31.33	chr7:126044924-126046149	1.34x10 ⁻²¹	[GRM8]
Amplification	chr7	7q34	chr7:142474654-142488687	6.70x10 ⁻²⁰	PRSS2, TRY6
Amplification	chr7	7p11.2	chr7:55021224-56391626	0.029921	CCT6A, EGFR, GBAS, PHKG1, PSPH, SUMF2, CHCHD2, MRPS17, LANCL2, VOPPI, SEPT14, ZNF713, FKBP9L, LOC389493, SNORA15
Amplification	chr8	8q24.21	chr8:128367089-128464595	4.90x10 ⁻³¹	POU5F1B, LOC727677
Amplification	chr8	8p11.22	chr8:39226350-39395856	2.03x10 ⁻²⁷	ADAM3A, ADAM5P
Amplification	chr9	9p11.2	chr9:44396701-44748244	0.00043427	[LOC643648]
Amplification	chr9	9p23	chr9:660609-15266049	8.68x10 ⁻⁷	hsa-mir-101-2, DMRT1, MLANA, GLDC, INSL4, JAK2, NFIB, PTPRD, RFX3, RLN1, RLN2, SLC1A1, SMARCA2, TYRP1, VLDLR, MPDZ, CER1, KIAA0020, RCL1, DMRT2, INSL6, KDM4C, KANK1, RANBP6, CD274, AK3, C9orf68, CDC37L1, C9orf46, KIAA1432, DMRT3, ERMP1, PDCD1LG2, GLIS3-AS1, TPD52L3, IL33, C9orf123, UHRF2, TTC39B, FREM1, KIAA2026, KCNV2, GLIS3, LURAP1L, ZDHHC21, LOC389705, FLJ35024, FLJ41200, PPAPDC2, MIR101-2, C9orf146, MIR4665
Deletion	chr1	1p13.3	chr1:110226488-110260741	5.65x10 ⁻⁶⁶	GSTM1
Deletion	chr1	1q21.3	chr1:152552821-152601615	2.18x10 ⁻⁷⁹	LCE3A, LCE3B, LCE3C
Deletion	chr1	1q21.3	chr1:152747127-152778442	1.81x10 ⁻²⁰	LCE1D, LCE1E, LCE1F
Deletion	chr1	1p36.13	chr1:17089350-17301671	5.42x10 ⁻¹⁹	CROCC, MIR3675
Deletion	chr1	1q31.3	chr1:196714823-196788985	7.98x10 ⁻²⁵	CFHR3
Deletion	chr1	1q44	chr1:248713992-248808556	4.51x10 ⁻⁹	OR2T34, OR2T10, OR2T11, OR2T29, OR2T35
Deletion	chr1	1p36.11	chr1:25571270-25673153	4.85x10 ⁻³⁶	RHD
Deletion	chr10	10q26.3	chr10:131759631-135534747	3.54x10 ⁻⁷	hsa-mir-202, hsa-mir-378c, ADAM8, BNIP3, CYP2E1, ECHS1, INPP5A, UTF1, GLRX3, DPYSL4, TUBGCP2, DUX4, DUX2, VENTX, CALY, TTC40, PPP2R2D, LRRC27, GPR123, NKX6-2, KNDCL1, MTG1, SYCE1, PRAP1, ZNF511, CTAGE7P, C10orf91, PWWP2B, PAOX, TCERGIL, C10orf125, JAKMIP3, STK32C, LOC387723, FLJ46300, LOC399829, SPRNP1, FRG2B, SPRN, MIR202, LOC619207, DUX4L7, DUX4L6, DUX4L5, DUX4L3, DUX4L2, MIR378C, MIR3944
Deletion	chr10	10q23.31	chr10:89566631-90040565	1.18x10 ⁻¹⁸	PTEN, CFLIP1, KLLN
Deletion	chr11	11q25	chr11:133399722-135006516	1.59x10 ⁻⁷	IGSF9B, NCAPD3, ACAD8, B3GAT1, THYN1, JAM3, GLB1L2,

Table SII. Continued.

Type	Chromosome	Chromosome band	Genomic region	q-value	Gene(s)
Deletion	chr11	11p15.1	chr11:18811266-19082428	2.54x10 ⁻¹³	VPS26B, GLB1L3, SPATA19, LOC283174, LOC283177, LOC100128239, MIR4697
Deletion	chr11	11p15.4	chr11:4943891-5011506	1.25x10 ⁻⁵¹	MRGPRX2, MRGPRX1
Deletion	chr11	11q11	chr11:55413672-55541440	4.98x10 ⁻¹³	OR51G1, OR51A4, OR51A2
Deletion	chr11	11p15.4	chr11:5773715-5847172	2.52x10 ⁻³⁵	OR4S2, OR4C6
Deletion	chr12	12p13.2	chr12:11236216-11266830	1.78x10 ⁻⁸	OR52N1, OR52N4, OR52N5, OR52N2
Deletion	chr12	12p13.2	chr12:11504092-11704375	4.29x10 ⁻¹⁰	TAS2R43
Deletion	chr12	12q13.13	chr12:48478073-57852368	7.45x10 ⁻⁸	PRB1, PRB2
					hsa-mir-1228, hsa-mir-148b, hsa-mir-615, hsa-mir-196a-2,
					hsa-mir-1293, hsa-mir-1291, ACCN2, ACVR1B, ACVRL1, ADCY6,
					AMHR2, APOF, AQP5, AQP6, ARF3, ATF1, ATP5B, ATP5G2,
					CACNB3, CCNT1, CD63, CDK2, CS, DGKA, EIF4B, CELA1,
					ERBB3, BLOC1S1, GPD1, NCKAP1L, NR4A1, HNRNPA1, HOXC4,
					HOXC5, HOXC6, HOXC8, HOXC9, HOXC10, HOXC11, HOXC12,
					HOXC13, IGFBP6, INHBC, ITGA5, ITGA7, ITGB7, KRT1, KRT2,
					KRT3, KRT4, KRT5, KRT6A, KRT6B, KRT7, KRT8, KRT18,
					KRT81, KRT82, KRT83, KRT84, KRT85, KRT86, LALBA, LRP1,
					MIP, MMP19, MYL6, MYO1A, NAB2, NACA, NFE2, SLC11A2,
					PA2G4, PCBP2, PDE1B, PFEN5, PFKM, POU6F1, PPP1R1A,
					PRIM1, PRKAG1, PRPH, RAB5B, RARG, RBMS2, RDH5, RPL41,
					RPS26, SCN8A, SHMT2, PMEL, SMARCC2, SMARCD1, SP1,
					STAT2, STAT6, SUOX, TAC3, TARB2, TMBIM6, TFCEP2, WNT1,
					WNT10B, MAP3K12, TUBA1A, MLL2, AAAS, SOAT2, RDH16,
					NPFF, HSD17B6, TIMELESS, KRT75, DDX23, SLC4A8, ESPL1,
					DAZAP2, KIAA0748, ZBTB39, PAN2, TROAP, RNF41, GDF11,
					CNPY2, TUBA1B, MCRS1, PTGES3, ATF7, BAZ2A, GALNT6,
					NXPH4, GPR182, COPZ1, R3HDM2, FAIM2, DDN, TMEM194A,
					ESYT1, TENC1, KCNH3, CBX5, ANP32D, SMUG1, PRPF40B,
					METTL7A, LETMD1, ZNF385A, SNORD59A, GLS2, RND1,
					ORMDL2, RACGAP1, DHH, FKBP11, KRT76, CSAD, BIN2,
					LIMA1, IL23A, GPR84, PRR13, KANS12, LMBR1L, NDUFA4L2,
					SMAGP, DIP2B, CALCOO1, NCKAP5L, NEUROD4, C12orf10,
					C12orf44, IKZF4, SPATS2, OBFC2B, DNAJC22, CSRN2P3, MFSD5,
					FAM186B, WIBG, SARNP, TUBA1C, ZC3H10, SPRYD3, MFSD5,
					C12orf62, DNAJC14, CCDC65, LACRT, FMNL3, CERS5, COQ10A,
					KRT71, LARP4, DCD, MUC1, FAM186A, OR10P1, SDR9C7,
					RHEBL1, C12orf54, ZNF641, OR10AD1, SP7, GTSF1, OR10A7,
					KRT74, ASB8, MYL6B, KRT72, BCDIN3D, KRT80, GRASP,
					KRT78, METTL7B, STAC3, OR6C74, OR6C3, LOC255411,

Table SII. Continued.

Type	Chromosome	Chromosome band	Genomic region	q-value	Gene(s)
Deletion	chr12	12q23.1	chr12:99119341-100434068	1.97x10 ⁻⁷	LOC283332, LOC283335, ZNF740, OR6C6, ANKRD52, SLC39A5, SPRYD4, LOC283403, LOC283404, TMPRSS12, KRT6C, KRT73, C1QL4, KRT79, ANKRD33, OR6C2, OR6C4, HIFNT, OR8S1, KRT77, C12orf68, OR6C1, OR6C75, OR6C76, OR6C70, LOC400043, FIGNL2, OR6C65, OR6C68, MIR196A2, FLJ12825, TMEM198B, OR9K2, MIR148B, HIGD1C, GLYCAM1, HNRNPA1P10, SNORA2A, SNORA2B, SNORA34, SNORD59B, MIR615, HOTAIR, LOC100240734, LOC100240735, LOC100286844, MIR1228, MIR1293, MIR1291, LOC100335030, BLOC1S1-RDH5, MIR4701, MIR3198-2, LOC100652999
Deletion	chr13	13q14.2	chr13:48831963-49067933	2.42x10 ⁻¹¹	ANKS1B, FAM71C
Deletion	chr14	14q11.2	chr14:20241865-20456214	2.30x10 ⁻¹⁵	RB1, LPAR6
Deletion	chr14	14q11.2	chr14:24426725-24510209	5.96x10 ⁻⁶	OR4K5, OR4K1, OR4K15, OR4N2, OR4K2, OR4M1
Deletion	chr15	15q11.2	chr15:21134489-21934349	1.24x10 ⁻¹⁸	DHRS4L2
Deletion	chr15	15q13.2	chr15:30505205-30920624	1.84x10 ⁻¹⁵	LOC348120
Deletion	chr15	15q14	chr15:34660257-34818316	2.75x10 ⁻¹⁹	CHRFAM7A, ULK4P1, ULK4P2
Deletion	chr15	15q24.3	chr15:76614496-77224873	4.41x10 ⁻²⁷	hsa-mir-1233-1, GOLGA8A, MIR1233-1, MIR1233-2
Deletion	chr16	16p13.11	chr16:14989840-15143568	0.00019462	SCAPER, ISL2
Deletion	chr16	16q12.2	chr16:55781759-55842353	7.99x10 ⁻¹⁷	hsa-mir-1972-1, hsa-mir-3180-1, NPIP, PDXDC1, MIR3180-3, MIR3180-1, MIR3179-2, MIR3180-2, MIR3179-1, MIR3179-3
Deletion	chr16	16q22.1	chr16:70088798-70211443	0.0039578	CESIP1
Deletion	chr17	17p11.2	chr17:16555511-16735531	9.26x10 ⁻¹⁴	PDPR
Deletion	chr17	17p11.2	chr17:18317396-18441307	8.39x10 ⁻⁴¹	CCDC144A, USP32P1, FAM106CP
Deletion	chr17	17q21.31	chr17:44295835-44448745	2.94x10 ⁻³²	FAM106A, USP32P2, LOC339240, LGALS9C
Deletion	chr18	18q23	chr18:57357114-78077248	0.00019483	LRRC37A, ARL17A, ARL17B
Deletion	chr19	19p13.3	chr19:114300-2512794	3.26x10 ⁻¹¹	BCL2, CDH7, CYB5A, KDSR, GALR1, MBP, MC4R, NFATC1, SERPINB2, SERPINB5, SERPINB8, SERPINB10, SERPINB13, PMAIP1, SERPINB3, SERPINB4, ZNF236, SERPINB7, TNFRSF11A, CTDPI, SOCS6, VPS4B, ZNF516, TSHZ1, CD226, TXNL4A, ADNP2, PHLPPI, PIGN, RTTN, KCNG2, SALL3, CDH20, CDH19, TIMM21, TMX3, ZCCHC2, ZNF407, CNDP2, KIAA1468, CCDC102B, RBFA, PQLC1, NETO1, PARD6G, CNDP1, SERPINB12, SERPINB11, DSEL, FAM69C, CBLN2, FBXO15, DOK6, RNF152, LINC00305, ZADH2, C18orf62, LOC284276, HMSD, LOC284294, LOC339298, ATP9B, LOC400654, LOC400655, LOC400657, HSBP1L1, LOC643542, C18orf63, LOC100130522, LOC100131655, LOC100505776, LOC100505817
Deletion	chr19	19p13.3	chr19:114300-2512794	3.26x10 ⁻¹¹	hsa-mir-4321, hsa-mir-1909, hsa-mir-3187, AMH, ATP5D, AZU1, HCN2, BSG, CDC34, CIRBP, CNN2, CSNK1G2, CFD, ARID3A,

Table SII. Continued.

Type	Chromosome	Chromosome band	Genomic region	q-value	Gene(s)
Deletion	chr19	19q13.12	chr19:35840730-35900831	2.30x10 ⁻¹⁵	EFNA2, ELANE, GAMT, MKNK2, GPX4, GZMM, GADD45B, OAZ1, PALM, POLR2E, POLRMT, PRTN3, PTBP1, RPS15, STK11, TCF3, MADCAM1, SF3A2, PPAP2C, AP3D1, MED16, FSTL3, APC2, ABCA7, UQCRI1, SBNO2, HMHA1, SHC2, TIMM13, DAZAP1, FGF22, THEG, LSM7, MBD3, MIER2, PCSK4, C19orf24, PLEKHJ1, BTBD2, RNF126, SPPL2B, WDR18, REXO1, LPPR3, FAM108A1, KLF16, DOT1L, KISS1R, LMNB2, MUM1, MIDN, R3HDM4, C19orf6, TPGS1, REEP6, IZUMO4, SCAMP4, ADAT3, GRIN3B, JSRP1, MOB3A, C19orf21, PLK5, C2CD4C, CIRBP-AS1, C19orf25, ATP8B3, C19orf26, CSNK1G2-AS1, ODF3L2, ADAMTSL5, TMPPRS9, NDUFS7, C19orf35, ONECUT3, MEX3D, FLJ45445, PRSS57, LINGO3, LOC100288123, MIR1909, MIR1227, MIR3187, MIR4321, MIR4745
Deletion	chr19	19q13.31	chr19:43681169-43861052	1.17x10 ⁻¹⁶	FFAR1, FFAR3
Deletion	chr19	19q13.42	chr19:55320780-55347177	4.49x10 ⁻⁵	PSG4, PSG9, PRG1, LOC284344
Deletion	chr2	2q31.2	chr2:180127077-180734405	2.63x10 ⁻⁵	KIR3DL1
Deletion	chr2	2q37.3	chr2:242690661-243032321	8.90x10 ⁻¹¹	hsa-mir-1258, ZNF385B, MIR1258
Deletion	chr20	20p13	chr20:1536397-1601717	9.20x10 ⁻⁷⁸	PDCD1, GAL3ST2, NEU4, CXXC11
Deletion	chr20	20q13.2	chr20:52486699-52694752	0.0005396	SIRPB1
Deletion	chr21	21p11.1	chr21:1-11039219	8.86x10 ⁻⁷	BCAS1, SUMO1P1, MIR4756
Deletion	chr21	21q11.2	chr21:11091684-14780301	0.0002395	TPTE, TEK4P2, MIR3687, MIR3648
Deletion	chr22	22q11.23	chr22:24231823-24350529	1.93x10 ⁻⁷	hsa-mir-3156-3, ANKRD30BP2, MIR3156-3
Deletion	chr22	22q11.23	chr22:24324874-24376916	7.38x10 ⁻⁵⁰	DDT, GSTT2, MIF, GSTTP1, LOC284889, GSTT2B, DDTL
Deletion	chr22	22q13.1	chr22:39268209-39412922	5.64x10 ⁻⁵	GSTTP1, LOC391322
Deletion	chr3	3q22.1	chr3:129692687-129819637	5.58x10 ⁻²⁵	APOBEC3B, APOBEC3A
Deletion	chr3	3q29	chr3:195263162-195455876	7.14x10 ⁻¹⁵	TRH, ALG1L2
Deletion	chr3	3p21.1	chr3:52911617-53125921	2.48x10 ⁻²³	hsa-mir-570, APOD, MIR570, SDHAP2
Deletion	chr3	3p12.3	chr3:75260602-75682317	2.42x10 ⁻¹¹	SFMBT1
Deletion	chr3	3p11.1	chr3:88200472-93597666	8.97x10 ⁻⁵	hsa-mir-1324, FAM86DP, MIR1324, MIR4444-1
Deletion	chr4	4p16.3	chr4:1-212099	2.07x10 ⁻¹¹	EPHA3
Deletion	chr4	4q35.2	chr4:174228605-191154276	1.26x10 ⁻⁵	ZNF595, ZNF718
					hsa-mir-1305, hsa-mir-4276, AGA, SLC25A4, CASP3, DCTD, FI1, ACSL1, FAT1, FRG1, GPM6A, HMGB2, HPGD, HSP90AA4P, ING2, IRF2, KLKB1, MTNR1A, TLR3, VEGFC, GLRA3, SORBS2, SAP30, HAND2, ADAM29, SCRG1, DUX4, FAM149A, FBXO8, DUX2, PDLIM3, CLDN22, NEIL3, UFSP2, CDKN2AIP, ODZ3, LRP2BP, STOX2, KIAA1430, SPCS3, TRAPPC11, MLFIIP, NBLA00301, WWC2, CEP44, SNX25, MGC45800, WDR17, ZFP42, SPATA4, ENPP6, ASB5, C4orf38, RWDD4, CCDC111,

Table SII. Continued.

Type	Chromosome	Chromosome band	Genomic region	q-value	Gene(s)
Deletion	chr4	4p15.31	chr4:20700937-21849867	2.54x10 ⁻⁶	TRIML2, CCDC110, CYP4V2, LOC285441, LOC285501, LOC339975, TRIML1, ANKRD37, LOC389247, HELT, LOC401164, FAM92A3, C4orf47, DUX4L4, FRG2, SLED1, FLJ38576, DUX4L6, DUX4L5, DUX4L3, LINC00290, LOC728175, DUX4L2, LOC731424, CLDN24, LOC100288255, MIR1305, MIR4276, MIR3945, LOC100506229
Deletion	chr4	4q13.2	chr4:69360490-69521408	5.50x10 ⁻³⁶	KCNIP4, PACRGL
Deletion	chr4	4q13.2	chr4:70074348-70351339	1.42x10 ⁻²⁷	UGT2B17
Deletion	chr5	5p15.2	chr5:11903165-13696061	3.38x10 ⁻⁷	UGT2B28
Deletion	chr5	5q35.3	chr5:180279510-180474800	1.66x10 ⁻⁵⁴	TAG
Deletion	chr5	5q11.2	chr5:53833564-57754039	2.20x10 ⁻¹⁰	BTNL3, BTNL8
Deletion	chr5	5q12.1	chr5:56775932-82375783	2.34x10 ⁻¹¹	hsa-mir-449c, GZMA, GZMK, IL6ST, MAP3K1, PPAP2A, CCNO, ESM1, SKIV2L2, DHX29, DDX4, GPBP1, ANKRD55, C5orf35, IL3IRA, SLC38A9, MIER3, CDC20B, IDAS, ACTBL2, RNF138P1, GPX8, MIR449A, MIR449B, MIR449C
Deletion	chr5	5q12.1	chr5:56775932-82375783	2.34x10 ⁻¹¹	hsa-mir-582, TRIM23, ARSB, BHMT, BTF3, CCNB1, CDK7, CKMT2, ERCC8, CRHBP, DHFR, F2R, F2RL1, F2RL2, FOXD1, GTF2H2, HEXB, HMGCR, HTR1A, KIF2A, TNPO1, CD180, MAP1B, MSH3, NAIP, PDE4D, PIK3R1, PMCHL2, RAD17, RASGRF2, RPS23, SMN1, SMN2, TAF9, TBCA, THBS4, SERF1A, ENCI, AP3B1, PDE8B, HOMER1, SCAMP1, CARTPT, ZFYVE16, COL4A3BP, LHFPL2, CWC27, NSA2, PLK2, IQGAP2, SMA4, SMA5, ADAMTS6, SV2C, MRPS27, PPWD1, OTP, SSBP2, BHMT2, PART1, FAM169A, RNU5E-1, RNU5D-1, DIMT1, DMGDH, IPO11, GCNT4, POLK, SGTB, AGGF1, WDR41, DEPDC1B, BDP1, ERBB2IP, NLN, ZSWIM6, ANKRA2, MCCC2, CENPK, RGNEF, SLC30A5, CENPH, PTCDD2, ELOVL7, C5orf44, ATG10, UTP15, ZCCHC9, ZBED3, GFM2, SPZ1, NDUFAF2, MRPS36, ATP6AP1L, FCHO2, RAB3C, JMY, TMEM171, TMEM174, POC5, ACOT12, SREK1, TMEM167A, MARVELD2, PAPD4, ZNF366, FAM151B, S100Z, CCDC125, GAPT, CMYA5, ANKRD31, SERINC5, C5orf64, RNF180, SREK1IP1, ANKRD34B, MTX3, MAST4, RGS7BP, CRSP8P, C5orf43, LOC644936, LOC647859, GUSBP3, GTF2H2B, SCARNA18, SNORA47, GTF2H2C, SERF1B, LOC728723, GTF2H2D, GUSBP9, LRRC70, LOC100131067, FAM159B, LOC100170939, LOC100272216, NCRUPAR, LOC100303749, MTRNR2L2, OCLN, MIR4804, MIR3977, MIR4803
Deletion	chr5	5p15.33	chr5:685505-866370	0.0018387	ZDHHC11
Deletion	chr6	6q25.3	chr6:152952392-171115067	2.86x10 ⁻⁵	hsa-mir-1913, hsa-mir-1202, hsa-mir-1273c, ACAT2, CCR6, GPR31, IGF2R, KIF25, LPA, MASI, MAP3K4, MLLT4, OPRM1, PARK2,

Table SII. Continued.

Type	Chromosome	Chromosome band	Genomic region	q-value	Gene(s)
Deletion	chr6	6p22.1	chr6:29798168-29895972	2.69x10 ⁻²⁷	PDCD2, PLG, PSMB1, RPS6KA2, SLC22A1, SLC22A3, SLC22A2, SOD2, T, TBP, TCP1, TCP10, TCPE3, DYNLT1, THBS2, EZR, VIP, RNASET2, SYNJ2, QKI, WTAP, PDE10A, FGFR1OP, SCAF8, IPCEF1, TIAM2, C6orf123, FBXO5, RGS17, DLL1, MRPL18, CLDN20, NOX3, TFB1M, SNX9, BRP44L, UNC93A, MTRF1L, PHF10, C6orf70, AGPAT4, TULP4, ARID1B, TMEM181, SMOC2, ZDHHC14, FRMD1, AGPAT4-IT1, C6orf208, MYCT1, LPAL2, RSPH3, TTLL2, FAM120B, FNDIC1, SERAC1, LINC00473, SYTL3, SFT2D1, TAGAP, PACRG, CNKSR3, PNLD1, LOC154449, DACT2, C6orf118, OSTCP1, WDR27, LOC285796, PRR18, C6orf120, DKFZp451B082, TCP10L2, LINC00242, GTF2H5, LOC441177, MLLT4-AS1, SNORA20, SNORA29, TMEM242, LOC729603, HGC6.3, LOC100129518, C6orf99, LOC100289495, MIR1913, MIR3918, MIR3939, MIR3692, CAHM, MIR4466, MIR4644
Deletion	chr6	6p21.32	chr6:32412593-32561294	7.72x10 ⁻¹³	HLA-H, HCG4B
HLA-DRB6					HLA-DRB1, HLA-DRB5, TAS2R38, MGAM
Deletion	chr7	7q34	chr7:141671057-141820601	1.85x10 ⁻²⁰	PRSS1, PRSS2, TRY6
Deletion	chr7	7q34	chr7:142454842-142554246	3.69x10 ⁻³²	OR2A1, OR2A7, OR2A20P, OR2A42, OR2A9P, ARHGEF35,
Deletion	chr7	7q35	chr7:143873953-144002396	4.51x10 ⁻⁹	TARP
LOC728377, CTAGE4					DEFB109P1, DEFB130, FAM66A, LOC100133267
Deletion	chr7	7p14.1	chr7:38268347-38381970	0.0017815	ADAM3A, ADAM5P
Deletion	chr8	8p23.1	chr8:12162783-12275740	4.47x10 ⁻³⁶	DEFB4A, LOC100132396
Deletion	chr8	8p11.22	chr8:39142235-39424859	1.88x10 ⁻⁴²	hsa-mir-602, hsa-mir-4292, hsa-mir-126, ABCA2, ABO, C8G, CACNA1B, ENTPD2, CEL, CELP, COL5A1, DBH, SARDH, FCN1, FCN2, FUT7, GRIN1, LCN1, NOTCH1, PAEP, PTGDS, RALGDS, RPL7A, RXRA, SNAPC4, SURF1, SURF2, SURF4, MED22, SURF6, TRAF2, VAV2, BRD3, LHX3, GFIB, SSNA1, EDF1, CLIC3, GTF3C5, ADAMTSL2, PPIR26, SEC16A, TUBB4B, UBAC1, OLFM1, AGPAT2, SDCCAG3, NOXA1, WDR5, ADAMTSL3, C9orf7, SLC2A6, MAN1B1, PMPCA, COBRA1, NELLF, GPM1, DKFZP434A062, GBGT1, SNORD36C, SNORD36B, SNORD36A, SNORD24, NDOR1, PHPT1, ANAPC2, DPP7, OBP2B, OBP2A, MRPS2EGFL7, FBXW5, C9orf167, EXD3, C9orf86, INPP5E, NPDC1, REXO4, KCNT1, CARD9, MRPL41, EHMT1, KIAA1984, SNHG7, TMEM141, C9orf37, SAPCD2,
Deletion	chr8	8p23.1	chr8:7752049-7831644	1.40x10 ⁻³⁰	
Deletion	chr9	9q34.3	chr9:135814535-141213431	0.00073337	

Table SII. Continued.

Type	Chromosome	Chromosome band	Genomic region	q-value	Gene(s)
Deletion	chr9	9p21.3	chr9:21550593-22449872	4.13x10 ⁻⁹	C9orf69, UAPIL1, ARRDC1, WDR85, TMEM203, ZMYND19, NACC2, C9orf116, LCN8, FAM69B, SLC34A3, CAMSAP1, C9orf163, MAMDC4, LCN6, C9orf96, QSOX2, LINC00094, LCN12, C9orf142, TPRN, GLT6D1, PNPLA7, C9orf169, ENTPD8, LCN15, C9orf172, LRRC26, TMEM8C, LCN9, LOC401557, LCNL1, C9orf139, FAM166A, SOHLH1, MIR126, LCN10, C9orf173, NRARP, FAM163B, FLJ40292, TUBBP5, RNF224, SNORA17, SNORA43, MIR602, RNF208, DN LZ, LOC100128593, LOC100129722, LOC100130954, LOC100131193, FAM157B, RNU6ATAC, LOC100289341, MIR4292, MIR3621, MIR3689A, MIR3689B, LOC100506599, MIR3689D1, MIR3689F, MIR4669, MIR4673, MIR4674, MIR3689C, MIR3689D2, MIR3689E, MIR4479
Deletion	chr9	9p11.2	chr9:43127846-44396699	2.70x10 ⁻⁷	CDKN2A, CDKN2B, MTAP, C9orf53, CDKN2B-AS1
Deletion	chr9	9p11.2	chr9:43800187-44993297	1.35x10 ⁻⁵	FAM75A6, LOC642929, LOC643648, CNTNAP3B LOC643648, FAM27C

Genes in brackets are predicted cancer genes. GISTIC, Genomic Identification of Significant Targets In Cancer.

Table SIII. Detected chromothripsis samples and chromosome pulverized regions.

Sample	Chromosome	Start	End	Switch number	Log10 (LR)
GSM2319895	12	1	63025520	26	19.62980539
GSM2319895	17	5000001	45000000	22	21.23309955
GSM3136990	13	67039983	115169878	43	34.10405443
GSM3136992	3	5000001	53129895	31	25.53959105
GSM3136996	1	140000001	188129895	23	12.06175987
GSM3136996	5	78383868	180915260	58	30.89087279
GSM3137000	19	5000001	35000000	20	18.30767097
GSM3137005	14	29272292	107349540	25	14.29714997
GSM3137019	1	110000001	225169878	51	35.11696607
GSM3137020	12	5000001	68025520	27	20.92610143
GSM805450	15	20000001	50000000	26	14.77671478
GSM805457	11	30000001	60000000	32	36.02814541
GSM805466	17	10000001	40000000	24	23.84912787
GSM805478	11	30000001	60000000	33	21.94060212
GSM805482	6	1	40000000	33	13.03314155
TCGA-A2-A0YE	17	18169690	81195210	43	25.05566946
TCGA-A2-A3XX	6	15000001	45000000	22	21.05223779
TCGA-A7-A0DA	6	1	40000000	24	12.99550766
TCGA-AC-A2QH	7	45000001	147531392	49	20.19875454
TCGA-AO-A12F	5	150000001	180000000	45	36.05351567
TCGA-AO-A12F	11	15000001	130169878	57	22.44833378
TCGA-AR-A2LR	6	10000001	40000000	34	22.95750867
TCGA-AR-A2LR	16	1	30000000	37	26.29455831
TCGA-B6-A402	4	40000001	80000000	30	18.96586013
TCGA-BH-A1F6	10	35000001	83129895	32	17.35210723
TCGA-BH-A1F6	19	29128983	59128983	26	14.80530176
TCGA-BH-A1FC	1	1	159138663	89	39.26480461
TCGA-C8-A26X	17	25000001	76304566	38	34.91943456
TCGA-D8-A27H	5	1	30000000	33	27.6039756
TCGA-E2-A14X	8	5000001	138851895	43	20.13517467
TCGA-E2-A158	5	1	51304566	43	18.98726969
TCGA-E2-A1L7	4	55000001	103129895	32	17.34124349
TCGA-E2-A1L7	12	75000001	123129895	28	13.68026573
TCGA-E2-A1LL	12	1	48129895	131	130.9814679
TCGA-EW-A1OW	1	1	198022430	47	10.51542398
TCGA-EW-A3U0	11	20000001	50000000	22	14.59556515
TCGA-GM-A2DF	8	1	48129895	23	12.05990978
TCGA-GM-A2DF	13	56040895	115169878	61	50.89879581

LR, likelihood ratio.

Table SIV. Identified regions enriched for somatic rearrangement breakpoints.

Chromosome	Chromosome Arm	Start	End
1	p	20000	1020000
1	p	1020000	2020000
1	p	12020000	13020000
1	p	16020000	17020000
1	p	17020000	18020000
1	p	25020000	26020000
1	p	35020000	36020000
1	p	72020000	73020000
1	p	85020000	86020000
1	p	104020000	105020000
1	p	110020000	111020000
1	p	111020000	112020000
1	p	112020000	113020000
1	p	120020000	121020000
1	q	143900000	144900000
1	q	144900000	145900000
1	q	146900000	147900000
1	q	147900000	148900000
1	q	148900000	149900000
1	q	151900000	152900000
1	q	154900000	155900000
1	q	160900000	161900000
1	q	195900000	196900000
1	q	242900000	243900000
1	q	247900000	248900000
2	p	34020000	35020000
2	p	35020000	36020000
2	p	38020000	39020000
2	p	52020000	53020000
2	p	87020000	88020000
2	p	89020000	90020000
2	q	97800000	98800000
2	q	146800000	147800000
3	p	46020000	47020000
3	p	53020000	54020000
3	p	65020000	66020000
3	p	75020000	76020000
3	q	128900000	129900000
3	q	161900000	162900000
3	q	164900000	165900000
3	q	194900000	195900000
3	q	196900000	197900000
4	p	4020000	5020000
4	p	9020000	10020000
4	p	10020000	11020000
4	p	34020000	35020000
4	q	63700000	64700000
4	q	64700000	65700000
4	q	68700000	69700000
4	q	69700000	70700000
4	q	161700000	162700000
4	q	172700000	173700000
4	q	189700000	190700000
5	p	20000	1020000
5	p	12020000	13020000
5	p	17020000	18020000
5	q	56700000	57700000
5	q	68700000	69700000

Table SIV. Continued.

Chromosome	Chromosome Arm	Start	End
5	q	69700000	70700000
5	q	149700000	150700000
5	q	154700000	155700000
5	q	174700000	175700000
5	q	176700000	177700000
5	q	178700000	179700000
5	q	179700000	180700000
6	p	20000	1020000
6	p	26020000	27020000
6	p	29020000	30020000
6	p	31020000	32020000
6	p	32020000	33020000
6	q	66300000	67300000
6	q	77300000	78300000
6	q	78300000	79300000
6	q	103300000	104300000
7	p	6020000	7020000
7	p	38020000	39020000
7	p	53020000	54020000
7	q	61700000	62700000
7	q	63700000	64700000
7	q	75700000	76700000
7	q	101700000	102700000
7	q	108700000	109700000
7	q	110700000	111700000
7	q	133700000	134700000
7	q	141700000	142700000
7	q	142700000	143700000
7	q	143700000	144700000
8	p	20000	1020000
8	p	3020000	4020000
8	p	4020000	5020000
8	p	6020000	7020000
8	p	7020000	8020000
8	p	8020000	9020000
8	p	11020000	12020000
8	p	12020000	13020000
8	p	39020000	40020000
8	p	40020000	41020000
8	p	42020000	43020000
8	q	128100000	129100000
8	q	144100000	145100000
9	p	20000	1020000
9	p	23020000	24020000
9	p	41020000	42020000
9	p	43020000	44020000
9	p	44020000	45020000
9	q	68700000	69700000
9	q	69700000	70700000
9	q	139700000	140700000
10	p	17020000	18020000
10	p	18020000	19020000
10	q	42300000	43300000
10	q	46300000	47300000
10	q	47300000	48300000
10	q	48300000	49300000
10	q	51300000	52300000
10	q	58300000	59300000
10	q	67300000	68300000

Table SIV. Continued.

Chromosome	Chromosome Arm	Start	End
10	q	80300000	81300000
10	q	81300000	82300000
10	q	88300000	89300000
10	q	89300000	90300000
11	p	4020000	5020000
11	p	5020000	6020000
11	p	18020000	19020000
11	p	25020000	26020000
11	p	34020000	35020000
11	p	49020000	50020000
11	p	50020000	51020000
11	q	80700000	81700000
11	q	88700000	89700000
12	p	20000	1020000
12	p	8020000	9020000
12	p	9020000	10020000
12	p	10020000	11020000
12	p	11020000	12020000
12	p	12020000	13020000
12	p	19020000	20020000
12	q	99200000	100200000
12	q	131200000	132200000
13	q	37500000	38500000
13	q	48500000	49500000
13	q	57500000	58500000
13	q	113500000	114500000
14	q	19100000	20100000
14	q	20100000	21100000
14	q	22100000	23100000
14	q	24100000	25100000
14	q	41100000	42100000
14	q	73100000	74100000
14	q	106100000	107100000
15	q	20700000	21700000
15	q	21700000	22700000
15	q	22700000	23700000
15	q	23700000	24700000
15	q	24700000	25700000
15	q	29700000	30700000
15	q	34700000	35700000
15	q	56700000	57700000
15	q	76700000	77700000
15	q	84700000	85700000
16	p	15020000	16020000
16	p	16020000	17020000
16	p	19020000	20020000
16	p	21020000	22020000
16	p	22020000	23020000
16	p	31020000	32020000
16	p	32020000	33020000
16	p	33020000	34020000
16	q	55600000	56600000
16	q	69600000	70600000
16	q	70600000	71600000
16	q	77600000	78600000
17	p	16020000	17020000
17	p	18020000	19020000
17	p	19020000	20020000
17	p	21020000	22020000

Table SIV. Continued.

Chromosome	Chromosome Arm	Start	End
17	q	33800000	34800000
17	q	38800000	39800000
17	q	42800000	43800000
17	q	43800000	44800000
19	p	20000	1020000
19	p	20020000	21020000
19	q	35600000	36600000
19	q	40600000	41600000
19	q	42600000	43600000
19	q	43600000	44600000
19	q	54600000	55600000
20	p	1020000	2020000
20	q	29400000	30400000
20	q	48400000	49400000
20	q	52400000	53400000
21	q	14300000	15300000
22	q	20900000	21900000
22	q	21900000	22900000
22	q	22900000	23900000
22	q	23900000	24900000
22	q	38900000	39900000
22	q	41900000	42900000
22	q	42900000	43900000