

No	Cell Line	BAC	5' side of breakage fusion junction						Mapping distance Gap (bp)	3' side of breakage fusion junction						Overlapping microhom (bp)	Sequence microhomology	Gap (bp)	Non-templated or unmapped sequence at junction	Description	Identified in other BACs
			Chr	Ori	Gene	Amplicon	Size	Position		Position	Size	Amplicon	Gene	Ori	Chr						
1	NCI-H2171	2b12	8	-		8q24	98152	128827516	547436	128280080	37648	8q24		+	8	4	gagg			inverted	
2	NCI-H2171	3c16	8	+	FAM77D	8q12	57966	63572177		150484043	21			-	4			3	taa	interchromosomal	
3	NCI-H2171	3c16	4	-			21	150484023		63697594	77	8q12	FAM77D	-	8			5	attat	interchromosomal	
4	NCI-H2171	3c16	8	-	FAM77D	8q12	77	63697518	64045092	127742610	52729	8q24		-	8			15	tacatttatcatgta	non-inverted	
5	NCI-H2171	5ad01	8	-		8q24	102735	127777716	64988357	62789359	11525	8q12	ASPH	-	8			44	tcagattttacaaatgatcatgtacatgtggaactgtacat	non-inverted	3m21
6	NCI-H2171	3n23	8	-		8q24	99960	128194090		85653106	39	11q14	EED	+	11	2	aa			interchromosomal	14m18
7	NCI-H2171	3n23	11	+	EED	11q14	39	85653144	40	85653104	22916	11q14	EED	-	11	2	at			inverted	14m18
8	NCI-H2171	4g20	8	+		8q24	29117	129022677	67165332	61857345	91912	8q12	CHD7	+	8	4	ttaa			non-inverted	5aa20, 18i10
9	NCI-H2171	5a23	8	+		8q12	74580	63285849	1183855	62101994	34505	8q12		-	8	4	ctgg			inverted	
10	NCI-H2171	5ai03	14	+	PSMB5	14q11	32148	22565874	35692	22601566	29715	14q11	ACIN1	-	14			1	g	inverted	5m12
11	NCI-H2171	5ai03	14	-	PSMB5	14q11	29715	22571852		128859928	1053	8q24		-	8	0				interchromosomal	5m12
12	NCI-H2171	5ai03	8	-		8q24	1053	128858876	65577182	63281694	576	8q12		-	8	0				non-inverted	5m12
13	NCI-H2171	5ai03	8	-		8q12	576	63281119	65406571	128687690	48	8q24		-	8	6	agaaaa			non-inverted	5m12
14	NCI-H2171	5ai03	8	-		8q24	48	128687643	60461	128627182	45646	8q24		+	8			1	t	inverted	5m12
15	NCI-H2171	5am21	8	-		8q24	59824	128463486		21748334	285	14q11	TRDV2	-	14			10	ctaactaatc	interchromosomal	
16	NCI-H2171	5am21	14	-	TRDV2	14q11	285	21748050	1202867	20545183	150	14q11		+	14	5	aaagg			inverted	
17	NCI-H2171	5am21	14	+		14q11	150	20545332	427183	20118149	90	14q11		+	14			6	ttcata	non-inverted	
18	NCI-H2171	5am21	14	+		14q11	90	20118238	1235714	18882524	708			+	14	2	ca			non-inverted	
19	NCI-H2171	5am21	14	+			708	18883231	2866033	21749264	248	14q11	TRDV2	+	14	5	ggaaa			non-inverted	
20	NCI-H2171	5am21	14	+	TRDV2	14q11	248	21749511		21736314	32	12p12		-				25	gactgtgagttgtcatagatggca	interchromosomal	
21	NCI-H2171	5am21	12	-		12p12	32	21736283		20550159	271	14q11		+	14			3	aat	interchromosomal	
22	NCI-H2171	5am21	14	+		14q11	271	20550429	1672913	18877516	112			-	14	2	at			inverted	
23	NCI-H2171	5am21	14	-			112	18877405	2874561	21751966	64	14q11	TRDV2	-	14			9	ccacacatt	non-inverted	
24	NCI-H2171	5am21	14	-	TRDV2	14q11	64	21751903	15690	21736213	44	12p12		+	12	0				inverted	
25	NCI-H2171	5am21	12	+		12p12	44	21736256	295586	21440670	438	12p12		-	12	4	gttg			inverted	
26	NCI-H2171	5am21	12	-		12p12	438	21440233		18447344	202			-	14			2	ct	interchromosomal	
27	NCI-H2171	5am21	14	-			202	18447143	3302138	21749281	915	14q11	TRDV2	-	14	4	aaat			non-inverted	
28	NCI-H2171	5am21	14	-	TRDV2	14q11	915	21748367	1636014	20112353	555	14q11		-	14			1	a	non-inverted	
29	NCI-H2171	5am21	14	-		14q11	555	20111799		128475809	23078	8q24		+	8	3	cca			interchromosomal	
30	NCI-H2171	5am21	8	+		8q24	23078	128498886		6880974	17147	12p13		+	12	2	at			interchromosomal	
31	NCI-H2171	5am21	12	+	ENO2	12p13	17147	6898120	270072	6628048	6774	12p13	ACRBP	-	12	2	ct			inverted	
32	NCI-H2171	7h20	12	+	CACNA1C		25778	2144674	4715022	6859696	89993	12p13		-	12	2	tg			inverted	
33	NCI-H2171	8j01	12	-	RECQL	12p12	6721	21544898	183555	21728453	41427	12p12		+	12	0				inverted	
34	NCI-H2171	8j01	12	+		12p12	41427	21769879	5725178	27495057	70865	12p11		+	12	0				non-inverted	
35	NCI-H2171	9d08	8	-		8q24	77382	128719202	267858	128987060	35590	8q24		+	8			12	ctcctaccacaca	inverted	
36	NCI-H2171	9g20	12	+		12p13	36089	8711072	26371	8737443	200	12p13	FAM80B	-	12			37	acctggccaaaaaatgtttataatgtttttaata	inverted	9g20
37	NCI-H2171	9g20	12	-	FAM80B	12p13	200	8737244	181596	8918840	10941	12p13	A2ML1	+	12	1	a			inverted	9g20
38	NCI-H2171	9g20	12	+		12p13	10941	8929780		103068575	221		RELN	-	7	3	gct			interchromosomal	

39	NCI-H2171	9g20	7	-	RELN		221	103068355		8931290	12451	12p13		-	12	0				interchromosomal		
40	NCI-H2171	12h10	8	-	FAM77D	8q12	40962	63506444		117371122	20			-	4	0				interchromosomal	1m02	
41	NCI-H2171	12h10	4	-			20	117371103	121422	63385022	21	8q12	FAM77D	-	8			11	acagttggaaact	interchromosomal	1m02	
42	NCI-H2171	12h10	8	-	FAM77D	8q12	21	63385002	64392636	127777638	79	8q24		+	8			1	t	inverted	1m02	
43	NCI-H2171	12h10	8	+		8q24	79	127777716	2219	127779935	75774	8q24		-	8	3		gtt		inverted	1m02	
44	NCI-H2171	16d15	8	-		8q24	32683	127668593	64283575	63385018	23	8q12	FAM77D	-	8	2		ag		non-inverted		
45	NCI-H2171	16d15	8	-	FAM77D	8q12	23	63384996	64531337	127916333	24884	8q24		+	8	9		tccatctca		inverted		
46	NCI-H2171	16d15	8	+		8q24	24884	127941217	416538	128357755	74	8q24		+	8			19	gggtccatggatatggaat	non-inverted		
47	NCI-H2171	16d15	8	+		8q24	74	128357828	63957877	64399951	64155	8q12		-	8	4		tttg		inverted		
48	NCI-H2171	16g22	12	+	ERGIC2	12p11	99591	29387067		63468962	21519	8q12		+	8	0				interchromosomal		
49	NCI-H2171	14g18	11	+		11q14	14505	86099937	5676	86094261	58	11q14		+	11	2		aa		non-inverted		
50	NCI-H2171	14g18	11	+		11q14	58	86094318		6643754	209	12p13	O15420	+	12	2		tc		interchromosomal		
51	NCI-H2171	14g18	12	+	O15420	12p13	209	6643962	7509	6636453	493	12p13	ING4	+	12	2		ca		non-inverted		
52	NCI-H2171	14g18	12	+	ING4	12p13	493	6636945	490	6636455	233	12p13	ING4	-	12	2		at		inverted		
53	NCI-H2171	14g18	12	-	ING4	12p13	233	6636223		86100511	38	11q14		+	11	4		ggta		interchromosomal		
54	NCI-H2171	14g18	11	+		11q14	38	86100548	621	86099927	74	11q14		+	11	2		at		non-inverted		
55	NCI-H2171	14g18	11	+		11q14	74	86100000	91	86100091	122	11q14		-	11	2		tc		inverted		
56	NCI-H2171	14g18	11	-		11q14	122	86099970		6645158	602	12p13	O15420	-	12	1		a		interchromosomal		
57	NCI-H2171	14g18	12	-	O15420	12p13	602	6644557	1115	6643442	145	12p13	O15420	-	12	3		aaa		non-inverted		
58	NCI-H2171	14g18	12	-	O15420	12p13	145	6643298		86101096	99	11q14		-	11				2	ta	interchromosomal	
59	NCI-H2171	14g18	11	-		11q14	99	86100998	11226	86089772	94466	11q14		-	11	4		attt		non-inverted		
60	NCI-H2171	5j24	8	+		8q24	3646	127880451	65080530	62799921	35	8q12		+	8			24	aaatgatcttttatcataatctg	non-inverted	5ad01	
61	NCI-H2171	5j24	8	+		8q12	35	62799955	65080925	127880880	35126	8q24		+	8			18	ggttatggcatctgtaag	non-inverted		
62	NCI-H2171	5j24	8	+		8q24	35126	127916005	63879645	64036360	51864	8q12	FAM77D	+	8	0				non-inverted	16j17	
63	NCI-H2171	5j24	8	+		8q12	51864	64088223	1269806	62818417	40	8q12		-	8			3	aaa	inverted	16j17	
64	NCI-H2171	5j24	8	-		8q12	40	62818378	65605334	128423712	2673	8q24		-	8	2		ca		non-inverted	16j17	
65	HCC1954	40b13	17	+		17q21	24990	35389837	1462	35391299	82217	17q21	PSMD3	-	17	3		cgc		Inverted*	32j13, 9n10, 8d20, 31o13, 35h09, 35k12	
66	HCC1954	35k08	17	-	CRKRS	17q21	10949	34894402	1092	34893310	154407	17q21	CRKRS	+	17	4		tagg		Inverted*		
67	HCC1954	10i10	17	-	CRKRS	17q21	12632	34903739	4567	34899172	55303	17q21	CRKRS	+	17	5		caggg		Inverted*		
68	HCC1954	11k02	5	+	NSD1	5q35	97357	176587780	22886	176610666	1954	5q35	NSD1	-	5	0				inverted	11j01	
69	HCC1954	11k02	5	-	NSD1	5q35	1954	176608713	2778708	179387421	2260	5q35	RNF130	+	5	2		tg		inverted	11j01	
70	HCC1954	11k02	5	+	RNF130	5q35	2260	179389680	2796793	176592887	5400	5q35	NSD1	-	5	1		c		inverted	11j01	
71	HCC1954	11k02	5	-	NSD1	5q35	5400	176587488		130418907	53239	8q24		+	8	15		gctcactgcaacctc		interchromosomal	11j01	
72	HCC1954	31f14	5	+	CRR9	5p15	11335	1379428	113473661	114853089	556	5q22		-	5	4		ctcc		inverted		
73	HCC1954	31f14	5	-		5q22	556	114852534	61764346	176616880	986	5q35	NSD1	+	5	2		ga		inverted		
74	HCC1954	31f14	5	+	NSD1	5q35	986	176617865	2824263	179442128	978	5q35		-	5	32		gcctcggcctcccaaagtgtctgggattacagg		inverted		
75	HCC1954	31f14	5	-		5q35	978	179441151		129271199	96695	8q24		-	8	1		g		interchromosomal		
76	HCC1954	35h21	5	-		5q22	4486	114777380	5609442	109167938	154020		MAN2A1	+	5	2		ta		inverted		
77	HCC1954	38g22	5	-			22801	100669876	11216487	111886363	89829	5q22		+	5	2		ag		inverted		
78	HCC1954	38g22	5	+		5q22	89829	111976191	1044324	113020515	65692	5q22		-	5			64	aaaattttataaaattttgtacaattttgtattattagataaagctaataattcatctgtcatg	inverted		

79	HCC1954	39c20	8	-		24340	121615956		117058884	18589			+	5	2	tt		interchromosomal		
80	HCC1954	39c20	5	+		18589	117077472	6783963	110293509	105642			-	5	2	tc		inverted		
81	HCC1954	40j06	8	+	8q24	9572	128241513	18637696	109603817	73197	8q23		-	8	3	aac		inverted		
82	HCC1954	40k17	5	-	5q22	47995	114883970		132526484	27242			+	8	1	a		interchromosomal		
83	HCC1954	9l18	8	-	8q23	151853	112946671	1977759	110968912	44840	8q23		-	8	1	g		non-inverted		
84	HCC1954	31g13	8	+	8q23	94173	107911049	229272	108140321	3846	8q23		+	8	1	t		non-inverted		
85	HCC1954	31g13	8	+	8q23	3846	108144166	14022341	122166507	79			-	8	3	ttt		inverted		
86	HCC1954	31g13	8	-		79	122166429	4689628	117476801	36796	8q23		+	8	2	ta		inverted		
87	HCC1954	10i14	5	+	5q22	6510	114880077	1576	114881653	132	5q22		-	5	2	ta		Inverted		
88	HCC1954	10i14	5	-	5q22	132	114881522	134	114881656	1311	5q22		+	5	7	ttgggtc		Inverted		
89	HCC1954	10i14	5	+	5q22	1311	114882966	16580075	131463041	1525	8q24	DDEF1	-	8	1	g		interchromosomal		
90	HCC1954	10i14	8	-	DDEF1	8q24	1525	131461517	510492	130951025	803	8q24	FAM49B	-	8	1	g		non-inverted	
91	HCC1954	10i14	8	-	FAM49B	8q24	803	130950223		115180645	2733	5q22		-	5	1	t		interchromosomal	
92	HCC1954	10i14	5	-	CDO1	5q22	2733	115177913		129279451	928	8q24		-	8	0			interchromosomal	
93	HCC1954	10i14	8	-	8q24	928	129278524	21148933	108129591	792	8q23		+	8	2	gg		inverted		
94	HCC1954	10i14	8	+	8q23	792	108130382	11146763	119277145	4220	8q23		+	8	0			non-inverted		
95	HCC1954	10i14	8	+	8q23	4220	119281364	11664411	130945775	967	8q24	FAM49B	-	8	0			inverted		
96	HCC1954	10i14	8	-	FAM49B	8q24	967	130944809	1568367	132513176	1170			-	8	1	g		non-inverted	
97	HCC1954	10i14	8	-		1170	132512007	1376551	133888558	72		PHF20L1	+	8	1	t		inverted		
98	HCC1954	10i14	8	+	PHF20L1		72	133888629	123	133888506	93493		PHF20L1	-	8	14	catatactgtgcaa		Inverted	
99	HCC1954	11c09	8	-	8q24	18265	128999586	1937062	130936648	1344	8q24	FAM49B	-	8	3	cgg		non-inverted		
100	HCC1954	11c09	8	-	FAM49B	8q24	1344	130935305	2964152	133899457	3536		PHF20L1	-	8	2	aa		non-inverted	
101	HCC1954	11c09	8	-	PHF20L1		3536	133895922	4606993	129288929	1540	8q24		-	8	0			non-inverted	
102	HCC1954	11c09	8	-	8q24	1540	129287390	1124902	130412292	1338	8q24		-	8			11	tgtattatct	non-inverted	
103	HCC1954	11c09	8	-	8q24	1338	130410954	473223	129937731	1099	8q24		-	8	0				non-inverted	
104	HCC1954	11c09	8	-	8q24	1099	129936633	953870	128982763	1154	8q24		-	8	3	ccc		non-inverted		
105	HCC1954	11c09	8	-	8q24	1154	128981610	1422824	130404434	1609	8q24		-	8	2	tg		non-inverted		
106	HCC1954	11c09	8	-	8q24	1609	130406042	3506894	133912936	8240		PHF20L1	-	8	0				non-inverted	
107	HCC1954	11c09	8	-	PHF20L1		8240	133904697		176593792	2747	5q35	NSD1	+	5	0			interchromosomal	
108	HCC1954	11c09	5	+	NSD1	5q35	2747	176596538	61748382	114848156	376	5q22		+	5	0			non-inverted	
109	HCC1954	11c09	5	+	5q22	376	114848531	61757631	176606162	1158	5q35	NSD1	+	5	3	cct		non-inverted		
110	HCC1954	11c09	5	+	NSD1	5q35	1158	176607319		131004017	327	8q24	FAM49B	-	8	2	gc		interchromosomal	
111	HCC1954	11c09	8	-	FAM49B	8q24	327	131003691		180393456	488	5q35		-	5	0			interchromosomal	
112	HCC1954	11c09	5	-	5q35	488	180392969		119282271	718	8q23		+	8	3	ctc		interchromosomal		
113	HCC1954	11c09	8	+	8q23	718	119282988		114860104	5073	5q22		+	5	4	cagt		interchromosomal		
114	HCC1954	11c09	5	+	5q22	5073	114865176	64509582	179374758	921	5q35	RNF130	-	5	0				inverted	
115	HCC1954	11c09	5	-	RNF130	5q22	921	179373838		129277811	4417	8q24		-	8	0			interchromosomal	
116	HCC1954	11c09	8	-	8q24	4417	129273395		114842249	1294	5q24		-	5			1	t	interchromosomal	
117	HCC1954	11c09	5	-	5q24	1294	114840956		108322211	707	8q23		-	8	3	cca			interchromosomal	
118	HCC1954	11c09	8	-	8q23	707	108321505	22674102	130995607	2640	8q24	FAM49B	+	8	1	a			inverted	
119	HCC1954	11c09	8	+	FAM49B	8q24	2640	130998246	478180	131476426	530	8q24	DDEF1	-	8	2	ca		inverted	

120	HCC1954	11c09	8	-	DDEF1	8q24	530	131475897		115218311	614	5q22	AP3S1	+	5	1	a		interchromosomal	
121	HCC1954	11c09	5	+	AP3S1	5q22	614	115218924		128994558	297	8q24		-	8	10	gtgagccacc		interchromosomal	
122	HCC1954	11c09	8	-		8q24	297	128994854	287723	129282577	430	8q24		-	8	0			non-inverted	
123	HCC1954	11c09	8	-		8q24	430	129282148	4004	129286152	190	8q24		-	8	2	tg		non-inverted	
124	HCC1954	11c09	8	-		8q24	190	129285963		180408242	59622	5q35	BTNL9	+	5	0			interchromosomal	
125	NCI-H1770	2g23	2	+		2p24	78150	15828399	888789	14939610	43869	2p24		+	2		10	ttagaggag	non-inverted	7b06
126	NCI-H1770	5f19	2	-		2p24	84200	16510223	712150	15798073	57047	2p24		+	2	2	gc		inverted	
127	NCI-H1770	6j16	2	-		2p24	93131	15948372	165375	15783026	44164	2p24		+	2	2	gg		inverted	
128	NCI-H1770	9n16	2	+	FAM49A	2p24	81656	16659458	712242	15947216	33299	2p24		-	2	2	gt		inverted	
129	NCI-H1770	10d19	2	-		2p24	14751	14782540	338	14782201	572	2p24		-	2	0			non-inverted	17g13
130	NCI-H1770	10d19	2	-		2p24	572	14781630	1883624	16665254	132871	2p24	FAM49A	-	2	4	agtt		non-inverted	17g13, (17b14, 2n05)**
131	NCI-H1770	17e05	2	+		2p24	63824	15839667	757822	15081845	640	2p24		-	2	2	ct		inverted	
132	NCI-H1770	17e05	2	-		2p24	640	15081205	2864	15084069	315	2p24		-	2	4	tcct		non-inverted	
133	NCI-H1770	17e05	2	-		2p24	315	15083750	100274	15081217	97741	2p24		-	2	0			non-inverted	
cnv	NCI-H2171	7h20	12	-	CD4	12p13		6777902	256	6777645		12p13	CD4	-	12	0			Non-inverted	
cnv	NCI-H2171	8j01	12	+		12p11		27539409	7021	27546431		12p11		+	12	1	t		Non-inverted	

Supplementary Table 1. List of all unique breakage-fusion junctions identified in NCI-H2171, NCI-H1770 and HCC1954. Information is presented for the two breakpoints 5' and 3' of the breakage-fusion junction including chromosome of origin (chr), orientation with respect to the reference genome sequence (ori), amplicon in which the sequence resides (amplicon), size of the DNA fragment/sequence (size) and chromosomal position (position). The 'mapping distance gap' represents the sequence between the two breakpoints when these reside on the same chromosome. Also presented are the features at the breakage-fusion junction including length and sequence of overlapping microhomology where present and length and sequence of regions within breakage-fusion junction which could not be mapped back to the reference genome sequence. A classification of the breakage-fusion junction is given, either interchromosomal, non-inverted or inverted, inverted duplications are marked (inverted*). Other BAC's in which the breakage-fusion junction was identified are also listed including duplication of two junctions in 9g20 (N^os 36 & 37). ** Breakage-fusion junction N^o130 in 10d19 was identified in a further two BACs 17b14 and 2n05 by PCR as the complete sequence of these BACs was not available. Two germline structural polymorphisms were also identified and these are listed in the last two rows of the table (labelled cnv).