
Heterogeneous breakpoints in patients with acute lymphoblastic leukemia and the dic(9;20)(p11~13;q11) show recurrent involvement of genes at 20q11.21

Qian An,^{1,2} Sarah L. Wright,² Anthony V. Moorman,^{2,3} Helen Parker,^{1,2} Mike Griffiths,⁴ Fiona M. Ross,⁵ Teresa Davies,⁶ Christine J. Harrison,^{2,3} and Jon C. Strefford^{1,2}

¹Cancer Genomics Group, Cancer Sciences Division, University of Southampton; ²Previous address: Leukaemia Research Cytogenetics Group, Cancer Sciences Division, University of Southampton; ³Northern Institute for Cancer Research, University of Newcastle, Newcastle upon Tyne; ⁴West Midlands Regional Genetics Laboratory, Birmingham Women's Hospital, Birmingham; ⁵Wessex Regional Genetics Laboratory, Salisbury District Hospital, Salisbury, and ⁶Bristol Genetics Laboratory, Southmead Hospital, Westbury-on-Trym, Bristol, UK

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[Online supplementary Tables 1-4](#). Refer to the corresponding _PDFs [An_SUPPL TABLE 1.pdf](#), [An_SUPPL TABLE 2.pdf](#), [An_SUPPL TABLE 3.pdf](#), and [An_SUPPL TABLE 4.pdf](#).

Supplementary table 3 Restriction enzymes and primers for LDI-PCR

Patient ID	Restriction enzyme	1st-Forward	2nd-Forward	Reverse
4451	<i>TaqI</i>	ACTTACCTTACCTGCTGG	CTCTCTCAAGCCAGGAAG	TGGGAATGTAGACCCAAG
5618	<i>PstI / SphI</i>	TGTGAGGAGGAGACAGAG	AGCGGAAATACCCACAAAG	CTGTCCTCTCTGGCAGG
7550	<i>NcoI / BslI</i>	GCACTTGCAGTCTTGAGTG	GGTGACGTCTGAGAGTGG	ATCTGACATTCTATAGACCC
6897	<i>SphI / SpeI</i>	TTCTGCCTGGATACTCAG	TTCCAGACCATTGGAG	CCAGAGTTAGTTTCTCCG
7063	<i>ScaI</i>	GTGTCCTTTCTTCAAGG	TTCTGGCTCCTTAGAATG	TTGTAGGCTGTTGGCTAG
8901	<i>SacI</i>	TGAGGCAAGCAACACCATG	GCTGTGATTACTGGTGTGAG	GTGACAGAGTGAGACCCTG

Supplementary table 2 Primer sequences of MCC markers on 9p13

Marker (gene/region)	External forward	Internal forward	Common reverse
1 (PAX5)	GATCTGTTTCAGGACATGG	CATCTCCAGGCAGCTTCG	CTATGATACTGTCATATTGG
2 (PAX5)	GAGACAGGAAGCATCAAG	CACCATGTTTGCCTGGG	CAGGAAAGGCACATGCAG
3 (PAX5)	CTCAGCTCGAACCATGG	CTCTTCTCCTTCCTGATGG	CTTACCTATGCTGTGACTGG
4 (PAX5)	CTCGTGGCTCAGGTGTGG	CCTCACGTGCGGTGACAG	CTGATGGAGTACGACGAG
5 (PAX5)	GACTAACTCAGCTTGGTGG	CAGAGTATTCAGCCATGG	CTCACCTGTCACAATGGG
6 (PAX5)	GTGAGAGCGTGTGAGCG	GTTGCTTTGATTCTCAGG	CAGTGCAAACCTACCAGG
7 (PAX5)	CACTCCATAATGATGTGG	GAAGTGGATTTGACGTTTGG	GGAACCTCCAGGAGTCG
8 (PAX5)	CACAGCATAGGTAAGAGG	CAGCACACGTAATAATGCG	CAATTTTCTGTCTCATGGTG
9 (PAX5)	GCACTTGCAGTCTTGAGTG	GGTGACGTCTGAGAGTGG	GTTTCTGTATCCCAAGTGG
10 (PAX5)	GAATGGGCAGAGTCCTGG	CTGATCCTCCATGGTTGG	GTCTTCCCTTTCTTATAGG
11 (PAX5)	GAAGAATAATTCTACTGTAGG	GTTCAAAAACCTACCGAGG	CAGAGCCCATGACATTCG
12 (PAX5)	CTGAAATGTGAGAAGAAAGG	CTACTCTTAAGAGTCAAAGG	GCTGAATTGCCATTTCTGG
13 (PAX5)	GATAAATAATAGCACTCTGG	CGAAGCAGATTAGTTATAGG	GAAGTCGAGGTTGTAGTG
14 (PAX5)	GCCTCTTATTAGCTGTATG	GATAATGCCTCAATGCCTGG	CAAACCTCAAACCGCAGAG
15 (PAX5)	GTGCAGTGGCATGATCTG	CGGAGTTTACCATCTTG	GGAAAGAATTCATAATAAAG
16 (PAX5)	CGCAACATCCATCAATAGG	GTGTCTAAGATACTTTGAAG	CACACGCACATGCATCTG
17 (PAX5)	CGAATGAATGAATGACATGC	GGAAAGCATAGAGGTCCG	CAACTGAGAACAGCTTTGG
18 (PAX5)	GGACACACAAATTCCTTGG	CTCTTGTGGTTACATTGGG	TCCTAATTCACAGAACCTG
19 (PAX5)	AGATCCTCCTACCATCTTG	ACAGAGCATCACCATTAGG	TGAGGAAATGGCGTATCAG
20 (PAX5)	TAGAAGTGAGGTTCACTGG	TCCCTGATTCCACAGCG	TCAGTCTGAGCTTCCTCG
21 (PAX5)	ATCCTTTAGAGCACTCAGG	CTCCTGTCTCTGGAGCAG	CGGAACCAGCAACTGTTG
22 (PAX5)	GAGATCCTACCTTCATCG	TTCAGGTGCTGGTATCAC	AACAGGGACTTCAATTCAG
23 (PAX5)	CTTTGCTCCATTTACACGG	CACGTACCTGAATGTTTGG	TAAGTGCACCTCCAGAGG
24 (PAX5)	GGTGAAGGACTTAGCTGG	TGTGAGGAGGAGACAGAG	GTCTTTGTGGGTATTTCCG
25 (PAX5)	TCACAGCTTCTGGCAAGG	TGGGCTCTGTCCAGAG	AGACTCCACCACCTTCTG
26 (PAX5)	GTCTACATTCCTCAAGTGG	ACTTACCTTACCTGCTGG	CTTCTGCTTGTGAGAGAG
27 (PAX5)	TCTGCTAATGGTCTCATAG	GCTTGTCTTGTGGTCAG	CATGAAGGAGGAGTTCAG
28 (PAX5)	TCAGGATGTACACATACAG	CTTCCACCCTGTCTGATG	CCTGTTACCTCTGTCTG
29 (PAX5 3' region)	AGCATCAGATGCCATCAG	GCACATGTGGACACCAG	TGAGAGTTCGCCACAG
30 (PAX5 3' region)	TCCTTGCTCTCACCTG	CTACCACATTTAGCCTCG	GTGATGCTGACACGTGG
31 (PAX5 3' region)	TCTGCATGAGGTCCCAG	AACACATCAGTTGCTCCG	ATGTAGTCCCTGCCCTG
32 (PAX5 3' region)	GACCCACTGTCCTCAAG	AGCACTGGACTCAGGAG	TGGTTTCACTGGAAGG
33 (PAX5 3' region)	TAGGAGTCAGGGCATGG	TTGGCTGATAACAAGAAGG	CTCACCATGAAACAGGG
34 (PAX5 3' region)	GTGGTGACACAGTGCAG	GATACATACATGCCTGTG	GGGTTAGCGGTTATAATG
35 (PAX5 3' region)	ATGATGGCCAAGGGAGG	GATGGGACATAAGCACTG	GGTCGAGGAATTCGAGT
36 (PAX5 3' region)	CTCCATTCTTCAAGCAGG	CAGGAAGAACAGGAACAG	AGTGTCTCCCTCCATG
37 (PAX5 3' region)	ATGGCTGAGGTGGAGAG	TGTACAGGAAGTACCAG	CCAGAGTTAGTTTCTCCG
38 (PAX5 3' region)	ACTTGGTGACAGGGTAG	TGTTTGAATGCCACTGG	ACAGTGTAAGGGGCGTG
39 (ZCCHC7)	TTGATTGAGCCAGGCAG	CCTATTGGTGGGTTCTG	CATGCCTAGACTGAGAG
40 (ZCCHC7)	TCAGGGTCAGAGAGGTG	GGGTAGCATCGTTACAG	ACATCAAGATGCCAAGG
41 (ZCCHC7)	TCATTAATAACAGCTGAG	GATTTCCCTTTATTTCTG	AGCCAACCTCACCATAAG
42 (ZCCHC7)	TTACGAAGAAGTGGCAGG	GGTTTGAATCTCATCTGG	TCACCTGGAGCTCTCTAG
43 (ZCCHC7)	ATCTGATAACCCAGATGG	GACTACAGCTGACTACG	TCAAATGCTCAGTGTGG
44 (ZCCHC7)	TTCTGGCTCCTTAGAATG	ATGAAACGGGAAGTACTG	CTCTCTTGGACAGTAAATG

Supplementary table 1 FISH mapping clones on chromosomes 9 and 20

Probe	Location	Start bp	End bp
RP11-12P15	9p13.2	N/A ^a	N/A
RP11-8N6	9p13.2	36632473	36774305
RP11-344B23	9p13.2	36772306	36897415
RP11-297B17	9p13.2	36895416	37054511
RP11-220I1	9p13.2	37065972	37242474
RP11-558N17	9p13.2	37240475	37265639
RP11-397D12	9p13.2	37263640	37455975
RP11-405L18	9p13.2	37453976	37496328
RP11-263I4	9p13.2	37687305	37747914
RP11-3J10	9p13.2	37745915	37935185
RP11-38IH12	9p13.2	37979359	38144215
RP11-310F24	9p13.2	38142216	38263088
RP11-113O24	9p13.2	38261089	38427295
RP11-290L7	9p13.1	38981975	39177642
RP11-74L19	9p13.1	39485727	39638349
RP11-292B8	9p13.1	40205118	40384950
RP11-395E19	9p13.1	40645668	40774565
RP11-144A16	9p13.1	41332841	41507206
RP11-104G3	9p12	41753918	41917754
RP11-366N18	9p12	42881514	43065826
RP11-157L3	9p11.2	44586810	44769175
RP11-327I22	9p11.2	45063785	45244282
RP11-146D12	9p11.2	45528434	45634362
RP11-15E1	9p11.2	45632363	45798788
RP11-21H4	9q12	64594618	64767717
RP11-391M20	9q12	66812701	66987465
RP11-88I18	9q13	68236014	68360401
RP11-415N7	9q21.11	69381269	69489300
RP4-737E23	20p11.21	22997409	23121240
RP11-384D7	20p11.21	25234658	25364451
RP4-694B14	20p11.21	25522225	25650091
RP11-108H13	20p10	26181749	26267569
RP4-610C12	20q10	28033231	28197751
RP11-348I14	20q10	28197652	28267569
RP5-854E16	20q11.21	29267570	29338021
RP5-1018D12	20q11.21	29337922	29436411
RP5-1093G12	20q11.21	29436312	29577966
RP3-324O17	20q11.21	29577867	29657285
RP5-857M17	20q11.21	29657186	29756778
RP5-836N17	20q11.21	30126905	30238598
RP11-392M18	20q11.21	30238499	30383912
RP1-316I5	20q11.21	30383805	30402180
RP11-358N2	20q11.21	30402081	30486790
RP5-1184F4	20q11.21	30486691	30605563
RP11-410N8	20q11.21	30605464	30669072
WI2-250I3	20q11.21	N/A	N/A
RP11-503P21	20q11.21	30668973	30791658
RP5-1085F17	20q11.21	30791562	30910460
RP4-726C3	20q11.21	31039788	31169289
RP4-733O23	20q11.21	31169190	31184191
RP11-49G10	20q11.21	31184092	31345684
RP5-1187J4	20q11.21	31345585	31505024
RP1-63M2	20q11.22	31675031	31756944
RP4-553F4	20q11.22	31756845	31912314

RP5-1125A11	20q11.22	31912215	32067781
RPI-64K7	20q11.22	32067682	32207059
RP4-785G19	20q11.22	32206960	32322190
RP3-468O1	20q11.22	32474325	32572156
RP5-914B9	20q11.22	32572057	32595498
RPI1-346K17	20q11.22	32595391	32753365
RP5-1181N3	20q11.22	32753266	32845461
RPI-18C9	20q11.22	32845362	32972116
RP4-756N5	20q11.22	33031019	33154800
RP5-1031J8	20q12	37826211	37981423
RPI-2301I9	20q12	40304543	40448743
RPI-148H17	20q13.12	45431250	45515089
RP4-800J21	20q13.32	55367451	55475907

^a Genomic position data was not available