

Table SI. Incidence of CNVs in the BCP-ALL groups.

CNV	<i>BCR-ABL1</i> fusion, n (%)	<i>ETV6-RUNX1</i> fusion, n (%)	Hyperdiploidy, n (%)	Hypodiploidy, n (%)	Other BCP-ALL, n (%)	P-value
<i>IKZF1</i> del	3 (60.00)	3 (100.00)	3 (42.86)	1 (50.00)	29 (82.86)	0.0734
<i>CDKN2A/2B</i> del	1 (20.00)	2 (66.67)	1 (16.67)	1 (50.00)	17 (48.57)	0.3161
<i>IKZF3</i> del	0	0	0	0	2 (7.69)	0.8788
<i>IKZF2</i> del	0	0	0	0	2 (8.70)	0.2293
<i>PAX5</i> del	3 (60.00)	0	1 (16.67)	0	8 (24.24)	0.1255
<i>CRLF2</i> del	1 (20.00)	0	2 (28.57)	0	4 (12.90)	0.7046
<i>JAK2</i> del	0	0	1 (16.67)	1 (50.00)	4 (14.81)	0.5613
<i>ETV6</i> del	1 (20.00)	3 (100.00)	0	1 (50.00)	9 (29.03)	0.0191 ^a
<i>RB1</i> del	1 (20.00)	0	0	0	6 (18.75)	0.4657
<i>ERG</i> del	1 (20.00)	0	0	0	4 (15.38)	0.5893

^aP<0.05. Sample size of each group: *BCR-ABL1* fusion, n=5; *ETV6-RUNX1* fusion, n=3; hyperdiploidy, n=7; hypodiploidy, n=2; other BCP-ALL, n=35; *BCR-ABL1*, breakpoint cluster region and Abelson murine leukemia viral oncogene homolog 1 fusion; *ETV6-RUNX1*, ETS variant 6 and runt-related transcription factor 1 fusion; BCP-ALL, B-cell precursor acute lymphoblastic leukemia; *PAX5*, paired box 5; *IKZF1*, ikaros family zinc finger protein 1; *IKZF2*, ikaros family zinc finger protein 2; *IKZF3*, ikaros family zinc finger protein 3; *CDKN2A/2B*, cyclin dependent kinase inhibitor 2A/2B; *CRLF2*, cytokine receptor like factor 2; *JAK2*, janus kinase 2; *ETV6*, ETS variant 6; *RB1*, RB transcriptional corepressor 1; *ERG*, ETS transcription factor *ERG*; CNV, copy number variant.

Table SII. Relative expression of *ASNS*, *CTSB* and *LGMN* in the BCP-ALL groups.

Gene	<i>BCR-ABL1</i> fusion ^a	<i>ETV6-RUNX1</i> fusion ^a	Hyperdiploidy ^a	Hypodiploidy ^a	Other BCP-ALL ^a	P-value
<i>ASNS</i>	2.66 (2.60-3.20)	3.13 (2.14-3.87)	3.11 (1.72-4.03)	2.17 (2.01-2.33)	2.58 (2.26-3.26)	0.51
<i>LGMN</i>	2.03 (1.49-2.50)	0.81 (0.51-2.37)	1.36 (1.27-3.37)	1.22 (0.23-2.20)	1.48 (1.21-2.14)	0.52
<i>CTSB</i>	1.16 (1.09-1.40)	2.06 (0.50-2.24)	1.40 (0.57-3.00)	0.84 (0.44-1.24)	1.14 (0.79-1.77)	0.76

^aValues represent the median relative expression (interquartile range). *ASNS*, asparagine synthetase; *LGMN*, legumain; *CTSB*, cathepsin B; *BCR-ABL1*, breakpoint cluster region and Abelson murine leukemia viral oncogene homolog 1 fusion; BCP-ALL, B-cell precursor acute lymphoblastic leukemia; *ETV6-RUNX1*, ETS variant 6 and runt-related transcription factor 1 fusion.

Table SIII. Relative expression of *ASNS*, *CTSB* and *LGMN* according to the tested CNVs.

CNV	<i>ASNS</i> expression ^a	P-value	<i>LGMN</i> expression ^a	P-value	<i>CTSB</i> expression ^a	P-value
<i>IKZF1</i>						
Δ	2.70 (2.17-3.26)	0.56	1.43 (1.19-2.14)	0.14	1.11 (0.70-1.84)	0.19
<i>wt</i>	2.61 (2.33-3.11)		2.11 (1.28-2.42)		1.28 (1.05-1.92)	
<i>CDKN2A/2B</i>						
Δ	2.54 (2.17-3.14)	0.53	1.37 (1.19-2.12)	0.26	1.13 (0.73-1.77)	0.54
<i>wt</i>	2.70 (2.36-3.26)		1.49 (1.28-2.46)		1.16 (0.84-1.84)	
<i>IKZF3</i>						
Δ	2.93 (2.80-3.07)	0.87	1.62 (1.52-1.73)	0.87	1.62 (1.35-1.89)	0.63
<i>wt</i>	2.74 (2.36-3.29)		1.47 (1.23-2.42)		1.20 (0.70-1.91)	
<i>IKZF2</i>						
Δ	2.89 (2.80-2.98)	0.91	1.60 (1.48-1.73)	0.83	1.96 (1.89-2.03)	0.23
<i>wt</i>	2.74 (2.41-3.35)		1.48 (1.25-2.44)		1.10 (0.70-1.68)	
<i>PAX5</i>						
Δ	2.89 (2.68-3.50)	0.13	1.93 (1.49-2.86)	0.03 ^b	1.86 (1.10-2.19)	0.07
<i>wt</i>	2.51 (2.14-3.11)		1.34 (1.10-2.12)		1.07 (0.70-1.40)	
<i>CRLF2</i>						
Δ	2.67 (2.36-2.98)	0.98	1.48 (1.32-3.28)	0.60	0.89 (0.67-2.13)	0.55
<i>wt</i>	2.56 (2.14-3.26)		1.60 (1.19-2.41)		1.14 (0.79-1.77)	
<i>JAK2</i>						
Δ	2.54 (2.26-3.29)	0.81	2.01 (1.28-2.65)	0.32	1.17 (1.07-1.91)	0.73
<i>wt</i>	2.58 (2.14-3.11)		1.47 (1.19-2.37)		1.08 (0.70-1.40)	
<i>ETV6</i>						
Δ	2.47 (2.14-3.26)	0.38	1.31 (0.81-2.03)	0.09	1.40 (0.87-2.06)	0.57
<i>wt</i>	2.66 (2.33-3.19)		1.81 (1.27-2.48)		1.09 (0.73-1.77)	
<i>RBI</i>						
Δ	2.36 (2.14-3.07)	0.07	1.32 (1.06-1.86)	0.29	1.16 (0.89-1.50)	0.74
<i>wt</i>	2.69 (2.17-3.29)		1.68 (1.23-2.42)		1.14 (0.70-1.92)	
<i>ERG</i>						
Δ	2.51 (2.26-2.53)	0.53	1.86 (1.68-2.46)	0.43	1.16 (1.07-1.24)	0.72
<i>wt</i>	2.72 (2.17-3.26)		1.45 (1.15-2.12)		1.31 (0.73-2.03)	

^aValues represent the median relative expression (interquartile range). ^bP<0.05. CNV, copy number variation; *ASNS*, asparagine synthetase; *LGMN*, legumain; *CTSB*, cathepsin B; *PAX5*, paired box 5; *IKZF1*, ikaros family zinc finger protein 1; *IKZF2*, ikaros family zinc finger protein 2; *IKZF3*, ikaros family zinc finger protein 3; *CDKN2A/2B*, cyclin dependent kinase inhibitor 2A/2B; *CRLF2*, cytokine receptor like factor 2; *JAK2*, janus kinase 2; *ETV6*, ETS variant 6; *RBI*, RB transcriptional corepressor 1; *ERG*, ETS transcription factor ERG; wt, wild-type; Δ, deletion.

Table SIV. Relative expression of *ASNS*, *CTSB* and *LGMN* in the other BCP-ALL group (n=35) in patients with *PAX5* deletions, *IKZF1* deletions and both deletions.

Gene	$\Delta PAX5$, n=8		$\Delta IKZF1$, n=29		$\Delta IKZF1$ and $\Delta PAX5$, n=5	
	Expression ^a	P-value	Expression ^a	P-value	Expression ^a	P-value
<i>ASNS</i>	3.14 (2.77-3.57)	0.0117 ^b	2.70 (2.36-3.26)	0.1253	3.29 (2.98-3.44)	0.0334 ^b
<i>LGMN</i>	2.24 (1.77-2.86)	0.0029 ^b	1.47 (1.21-2.06)	0.4104	2.06 (1.81-2.65)	0.0735
<i>CTSB</i>	2.08 (1.52-2.26)	<0.0001 ^b	1.11 (0.73-1.52)	0.3938	2.03 (1.15-2.25)	0.0358 ^b

^aValues represent the median relative expression (interquartile range). ^bP<0.05. P-values represent differences between groups with deletions and wild-type genes. BCP-ALL, B-cell precursor acute lymphoblastic leukemia; *ASNS*, asparagine synthetase; *LGMN*, legumain; *CTSB*, cathepsin B; *PAX5*, paired box 5; *IKZF1*, ikaros family zinc finger protein 1; Δ , deletion.