

Supplemental File 4. References of Figure 4. Summary of key genes altered in the different signaling pathways involved in ALL.

Pathway	Gene	References
Cell cycle and p53	<i>ATM</i>	[1,2]
	<i>CCND3</i>	[1,3,4]
	<i>CDKN1B</i>	[3]
	<i>CDKN2A</i>	[1,2,4–7]
	<i>CDKN2B</i>	[1,2,5–11]
	<i>RB1</i>	[1-8,10–13]
	<i>STAG2</i>	[1,5]
	<i>TP53</i>	[1,2,4,5,7,13–15]
JAK-STAT	<i>CRLF2</i>	[5-7,15,16]
	<i>IL2RB</i>	[5,17]
	<i>IL7R</i>	[2-5,7,8,18,19]
	<i>JAK1</i>	[1-3,5,7-9,16,18,20–22]
	<i>JAK2</i>	[1,5-7,13,15,16,19]
	<i>JAK3</i>	[1,3-5,7,8,13,16,18,19,22,23]
	<i>PTPN2</i>	[8]
	<i>SH2B3</i>	[5,7,16,18,24,25]
	<i>STAT5A</i>	[4]
	<i>STAT5B</i>	[3,4,8,22]
	<i>TYK2</i>	[5,6,17]
RAS	<i>BRAF</i>	[4,5,13,18]
	<i>CBL</i>	[16,19,26]
	<i>CBLB</i>	[26]
	<i>FLT3</i>	[1-3,5-8,10,13,16,18,26,27]
	<i>KRAS</i>	[1,3-5,7-10,13,16,18,26]
	<i>NF1</i>	[1,2,4,5,13,16,26,28]
	<i>NRAS</i>	[1-4,7-10,13,16,18,26]
	<i>PTPN11</i>	[1,2,5,10,13,16,18,26,29]
	<i>RASGRP3</i>	[30]
Lymphoid development and differentiation	<i>Bcl11A</i>	[13]
	<i>BTG1</i>	[7,13]
	<i>CD200</i>	[7]
	<i>EBF</i>	[10]
	<i>EBF1</i>	[2,5,6,13]
	<i>ETV6</i>	[1-8,10,13,19]
	<i>IKZF1</i>	[1,3,4,7,10,13]
	<i>IKZF2</i>	[4,9,31]
	<i>IKZF3</i>	[9,31]
	<i>LEF1</i>	[3,4,8,9]
	<i>PAG1</i>	[2,5,31]
	<i>PAX5</i>	[1,5,6,10,13,32]
	<i>RAG1</i>	[32]
	<i>RAG2</i>	[33]
	<i>RUNX1</i>	[1,3-8,13,14,16,18,19,34,35]
	<i>TCF3</i>	[5,36]
	<i>TCF4</i>	[37]
	<i>VPREB1</i>	[38]
	<i>XBP1</i>	[13]
	<i>BCL11B</i>	[3,4,8]

Transcriptional processes	<i>BCOR</i>	[4,19]
	<i>CEBPA</i>	[16]
	<i>c-MYC</i>	[2,4,6,13]
	<i>DNM2</i>	[3,4,7,8,16,19,22,39]
	<i>ERG</i>	[2,5-7,40]
	<i>GATA3</i>	[2-4,7,8,16,18,22]
	<i>LMO2</i>	[6]
	<i>MEF2C</i>	[19]
	<i>MGA</i>	[2]
	<i>MYB</i>	[3-7]
	<i>MYCN</i>	[3]
	<i>RELN</i>	[16,18,19]
	<i>TAL1</i>	[4,6,8]
	<i>TBL1XR1</i>	[2,7,14]
	<i>TLX1</i>	[4,6]
	<i>UNC13D</i>	[16]
	<i>WT1</i>	[1,3,4,8,9,16,19,41]
NOTCH	<i>DLL4</i>	[19]
	<i>FBXW7</i>	[1,3,4,6-8,16,19,22]
	<i>HES1</i>	[19]
	<i>JAG1</i>	[19]
	<i>JAG2</i>	[19]
	<i>NOTCH1</i>	[1,3,4,7,8,10,16,19,22,42-44]
	<i>NOTCH2</i>	[16,19]
	<i>NOTCH3</i>	[19]
PI3K-AKT-mTOR	<i>AKT1</i>	[3,4,8,16,45]
	<i>AKT2</i>	[3]
	<i>CSF3R</i>	[16]
	<i>FGFR3</i>	[16]
	<i>mTOR</i>	[4,8,19]
	<i>PIK3C2B</i>	[3,19]
	<i>PIK3CA</i>	[1,2,8]
	<i>PIK3CD</i>	[3]
	<i>PIK3R1</i>	[2-4]
	<i>PTEN</i>	[1,3,4,7,8,19,22,46]
Wnt	<i>FAT1</i>	[3,7,16,19,22]
	<i>FAT3</i>	[7,19]
Epigenetic regulator and chromatin structure modifiers	<i>ARID1A</i>	[1,26]
	<i>ARID2</i>	[2]
	<i>ASXL1</i>	[1,2,4,13,16]
	<i>ASXL2</i>	[3,4]
	<i>BMI1</i>	[7]
	<i>CHD4</i>	[13]
	<i>CREBBP</i>	[1-4,13,16,44,47-50]
	<i>CTCF</i>	[2-4,22,26]
	<i>DNMT3A</i>	[1,6-8,16,19,51-53]
	<i>EED</i>	[4,7,8,18]
	<i>EP300</i>	[1,4,16,18,19,48,50,54,55]
	<i>EZH2</i>	[1-4,8,13,16,18,19,56]
	<i>GATA2</i>	[16,18]
	<i>HIST1H2AG</i>	[13]

	<i>IDH1</i>	[1,16,19]
	<i>IDH2</i>	[1,16,19]
	<i>KDM2B</i>	[2]
	<i>KDM5C</i>	[13]
	<i>KDM6A</i>	[1–5,8]
	<i>KMT2A</i>	[1,3,4]
	<i>KMT2D</i>	[1–4,7,13,19]
	<i>NCOR1</i>	[2]
	<i>NR3C1</i>	[40,57–59]
	<i>PHF6</i>	[1,3,4,6,8,9,13,16,18,19,22,60,61]
	<i>SETBP1</i>	[16]
	<i>SETD2</i>	[1,3–5,13,22]
	<i>SMARCA4</i>	[1,3]
	<i>SUZ12</i>	[3,4,7,8,18,19]
	<i>TET2</i>	[1,13,16,19]
	<i>WHSC1</i>	[2,19,26]
Translation and RNA stability	<i>CNOT1</i>	[4]
	<i>CNOT3</i>	[3,4,8,19,22]
	<i>DIS3</i>	[16]
	<i>RPL10</i>	[3,4,8,19,22]
	<i>RPL22</i>	[8]
	<i>RPL5</i>	[3,8,19]
	<i>ZCCHC7</i>	[5]
Splicing	<i>DHX15</i>	[3]
	<i>HNRNPA1</i>	[18]
	<i>HNRNPR</i>	[18]
	<i>PRPF40B</i>	[19]
	<i>SF3B1</i>	[16,19]
	<i>U2AF1</i>	[1–3,16]
	<i>ZRSR2</i>	[19]
DNA repair	<i>HERC1</i>	[19]
	<i>MSH2</i>	[19]
	<i>MSH6</i>	[40]
	<i>ZFHX4</i>	[13]
ABL	<i>ABL1</i>	[1,5,6]
	<i>PDGFRB</i>	[5,6,16]
Other	<i>BCR</i>	[5]
	<i>IGH</i>	[5]
	<i>LMO1</i>	[6]
	<i>LYN</i>	[40]
	<i>MEF2D</i>	[62]
	<i>NT5C2</i>	[7,34,40]
	<i>NTRK3</i>	[5,6,13,17]
	<i>PICALM</i>	[63]
	<i>TAL2</i>	[6]
	<i>TCRA</i>	[64]
	<i>TCRB</i>	[64]
	<i>TCRD</i>	[64]
	<i>TCRG</i>	[64]
	<i>ZEB2</i>	[2,5,6,13,65]
	<i>ZNF384</i>	[2,5]

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