

**Correlation of Genetic Variants and The Incidence, Prevalence, and Mortality Rates of Acute Lymphoblastic Leukemia**

**Supplementary Materials:**

**Table S1:** Studied Genes and References

GENES	REFERENCES
<i>ARID5B</i>	<p>Gutierrez-Camino A, Martin-Guerrero I, García-Orad A. Genetic susceptibility in childhood acute lymphoblastic leukemia. <i>Med Oncol.</i> 2017. Sep 13;34(10):179. doi: 10.1007/s12032-017-1038-7. PMID: 28905228.</p> <p>Hsu LI, Briggs F, Shao X, Metayer C, Wiemels JL, Chokkalingam AP, Barcellos LF. Pathway Analysis of Genome-wide Association Study in Childhood Leukemia among Hispanics. <i>Cancer Epidemiol Biomarkers Prev.</i> 2016 May;25(5):815-22. doi: 10.1158/1055-9965.EPI-15-0528.</p> <p>Papaemmanuil E, Hosking FJ, Vijaykrishnan J, Price A, Olver B, Sheridan E, Kinsey SE, Lightfoot T, Roman E, Irving JA, Allan JM, Tomlinson IP, Taylor M, Greaves M, Houlston RS. Loci on 7p12.2, 10q21.2 and 14q11.2 are associated with risk of childhood acute lymphoblastic leukemia. <i>Nat Genet.</i> 2009 Sep;41(9):1006-10. doi: 10.1038/ng.430.</p>
<i>CDKN2A, CDKN2B, CDKN1B</i>	<p>Gutierrez-Camino A, Martin-Guerrero I, García-Orad A. Genetic susceptibility in childhood acute lymphoblastic leukemia. <i>Med Oncol.</i> 2017 Sep 13;34(10):179. doi: 10.1007/s12032-017-1038-7.</p> <p>Sherborne AL, Hosking FJ, Prasad RB, ET AL. Variation in CDKN2A at 9p21.3 influences childhood acute lymphoblastic leukemia risk. <i>Nat Genet.</i> 2010 Jun;42(6):492-4. doi: 10.1038/ng.585.</p> <p>Hsu LI, Briggs F, Shao X, Metayer C, Wiemels JL, Chokkalingam AP, Barcellos LF. Pathway Analysis of Genome-wide Association Study in Childhood Leukemia among Hispanics. <i>Cancer Epidemiol Biomarkers Prev.</i> 2016 May;25(5):815-22. doi: 10.1158/1055-9965.EPI-15-0528.</p>
<i>CEBPE</i>	<p>Zou ZQ, Yue LJ, Ren YF. [Association between CYP1A1*2A polymorphism and susceptibility to childhood acute lymphoblastic leukemia: a Meta analysis]. <i>Zhongguo Dang Dai Er Ke Za Zhi.</i> 2015 Oct;17(10):1112-8.</p> <p>Gutierrez-Camino A, Martin-Guerrero I, García-Orad A. Genetic susceptibility in childhood acute lymphoblastic leukemia. <i>Med Oncol.</i> 2017 Sep 13;34(10):179. doi: 10.1007/s12032-017-1038-7.</p>

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<b>CYP1A1</b>	Brisson GD, Alves LR, Pombo-de-Oliveira MS. Genetic susceptibility in childhood acute leukaemias: a systematic review. <i>Ecancermedicalsecience</i> . 2015 May 14;9:539. doi: 10.3332/ecancer.2015.539.
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<b>CYP2D6</b>	Silveira Vda S, Canalle R, Scrideli CA, Queiroz RG, Tone LG. Role of the CYP2D6, EPHX1, MPO, and NQO1 genes in the susceptibility to acute lymphoblastic leukemia in Brazilian children. <i>Environ Mol Mutagen</i> . 2010 Jan;51(1):48-56. doi: 10.1002/em.20510.
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<b>CYP3A5</b>	a LM, Liu HC, Ruan LH, Feng YM. CYP3A5 * 3 genetic polymorphism is associated with childhood acute lymphoblastic leukemia risk: A meta-analysis. <i>Biomed J</i> . 2015 Sep-Oct;38(5):428-32. doi: 10.4103/2319-4170.151029.
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<b>EPB41L2</b>	Han S, Lee KM, Park SK, Lee JE, Ahn HS, Shin HY, Kang HJ, Koo HH, Seo JJ, Choi JE, Ahn YO, Kang D. Genome-wide association study of childhood acute lymphoblastic leukemia in Korea. <i>Leuk Res</i> . 2010 Oct;34(10):1271-4. doi: 10.1016/j.leukres.2010.02.001.

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<b>GSTM1</b>	hen HC, Hu WX, Liu QX, Li WK, Chen FZ, Rao ZZ, Liu XF, Luo YP, Cao YF. Genetic polymorphisms of metabolic enzymes CYP1A1, CYP2D6, GSTM1 and GSTT1 and leukemia susceptibility. <i>Eur J Cancer Prev.</i> 2008 Jun;17(3):251-8. doi: 10.1097/CEJ.0b013e3282b72093.
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<b>MAN2A1</b>	Han S, Lee KM, Park SK, Lee JE, Ahn HS, Shin HY, Kang HJ, Koo HH, Seo JJ, Choi JE, Ahn YO, Kang D. Genome-wide association study of childhood acute lymphoblastic leukemia in Korea. <i>Leuk Res.</i> 2010 Oct;34(10):1271-4. doi: 10.1016/j.leukres.2010.02.001.
<b>MDR1(ABCB1)</b>	Brisson GD, Alves LR, Pombo-de-Oliveira MS. Genetic susceptibility in childhood acute leukaemias: a systematic review. <i>Ecancermedalscience.</i> 2015 May 14;9:539. doi: 10.3332/ecancer.2015.539.
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<b>NQO1</b>	Silveira Vda S, Canalle R, Scrideli CA, Queiroz RG, Tone LG. Role of the CYP2D6, EPHX1, MPO, and NQO1 genes in the susceptibility to acute lymphoblastic leukemia in Brazilian children. <i>Environ Mol Mutagen</i> . 2010 Jan;51(1):48-56. doi: 10.1002/em.20510.
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<b>PAX5</b>	Khalid A, Aslam S, Ahmed M, Hasnain S, Aslam A. Risk assessment of FLT3 and PAX5 variants in B-acute lymphoblastic leukemia: a case-control study in a Pakistani cohort. <i>PeerJ</i> . 2019 Sep 10;7:e7195. doi: 10.7717/peerj.7195. PMID: 31565544; PMCID: PMC6743442.
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**Table S2:** Epidemiological Data on Global Population.

	INCIDENCE	PREVALENCE	MORTALITY
<b>AMR</b>			
Califórnia (USA)	1.33	9.21	0.38
Puerto Rico	1.45	9.73	0.44
Colombia	3.39	15.36	1.83
Peru	2.23	8.15	1.42
<b>EAS</b>			
China	3.7	26.62	0.91
Vietnam	1.45	5.33	0.9
Japan	3.69	30.55	0.32
<b>SAS</b>			

Texas (USA)	0.94	5.51	0.37
Pakistan	1.8	5.13	1.2
Bangladesh	0.89	2.56	0.64
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<b>EUR</b>			
Utah (USA)	0.96	6.17	0.33
Italy	6.8	56.59	0.54
Finland	4.58	37.92	0.4
Scotland	4.03	33.34	0.35
Spain	6.5	54.19	0.48
England	4.19	34.98	0.3
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<b>AFR</b>			
Nigeria	0.56	1.6	0.37
Kenya	0.62	1.83	0.45
Gambia	0.45	1.32	0.33
Sierra Leone	1.18	3.4	0.85
Barbados	0.86	3.56	0.5

Data acquires from Global Burden of Disease. **Abbreviations:** African (AFR), American Mixed (AMR), Asian (EAS), European (EUR), and South Asian (SAS).