Clinical, immunophenotypic, cytogenetic, and molecular genetic features in 117 adult patients with mixed-phenotype acute leukemia defined by WHO-2008 classification

Lingzhi Yan,[1]* Nana Ping,[1]* Mingqing Zhu,[1]* Aining Sun,[1] Yongquan Xue,[1] Changgeng Ruan,[1] Hans G. Drexler,[2] Roderick A. F. MacLeod,[2] Depei Wu,[1] and Suning Chen[1]

[1]Jiangsu Institute of Hematology, Key Laboratory of Thrombosis and Hemostasis of Ministry of Health, the First Affiliated Hospital of Soochow University, Suzhou, P.R. China; and [2]DSMZ, German Collection of Microorganisms and Cell Cultures, Braunschweig, Germany

Citation: Yan L, Ping N, Zhu M, Sun A, Xue Y, Ruan C, Drexler HG, MacLeod RAF, Wu D, and Chen S. Clinical, immunophenotypic, cytogenetic, and molecular genetic features in 117 adult patients with mixed-phenotype acute leukemia defined by WHO-2008 classification. Haematologica 2012;97(11):1708-1712. doi:10.3324/haematol.2012.064485

Online Supplementary Table S1. Copy number variations identified by array-CGH in 12 patients.

Case	Aberration	Cytoband	Start locus	End locus	Genes in the aberrant region
1	duplication	8q24	131070296	131104859	ASAP11T1
	trisomy	chromosome 21			multiple
2	deletion	1q31.1	184848595	184950328	FAM129A
	deletion	2p15	61538962	61762873	USP34, XPO1
	deletion	5q14.3	88128258	88812408	MEF2C
	deletion	7p13	0	43972490	UBE2D4 (disrupted)
	deletion	9p21.3	21902814	22008167	CDKN2A
	deletion	9p24.3-9p13.2	0	36899524	PAX5 (disrupted)
	deletion	9q33.3	128517633	128615510	PBX3 (disrupted)
	deletion	10q25.1	111772794	111872558	ADD3
	deletion	12p12.1	25416767	25529976	KRAS
	deletion	12q21.33	92328436	92532791	BTG1
	deletion	12q24.11	110740756	111692399	ATP2A2, CUX2, TCTN1,GPN3, MYL2
	deletion	22q11.2	22745368	22962941	PRAME
3	duplication	1p21.1	104067184	104155244	RPCN3,AMY2B
	deletion	12p13.3	8031207	8117977	SLC2A14, SLC2A3
	deletion	20p12.1	14721866	14808927	MACROD2
4	deletion	5q21.3	107178284	107487408	FBXL17
	deletion	7p22	5806358	5889565	ZNF815
	deletion	9p21	19726199	22512565	CDKN2A,CDKN2B, MLLT3
	duplication	11q24.2-11q25	125290934	132497189	ETS1,FLI1,FEZ1,SNX19,NTM,OPCML(disrupted)
	deletion	12q14.3-12q15	67708304	69065506	CAND1(disrupted),DYRK2,IL22,IL26,MDM1,RAP1A
	deletion	16p13.13	11081965	11467971	CLEC16A,SOCS1,PRM3,PRM2,PRM1,C16orf75,
5	duplication	5q35.2	176671264	176879431	NSD1(NUP98-NSD1 fusion)
	trisomy	chromosome 8			
	duplication	11p15.4	3766491	3973762	NUP98(NUP98-NSD1 fusion)
6	trisomy	chromosome 4			multiple
	deletion	7p12.2	50023023	50076720	ZPBP(disrupted)
	duplication	7q11.23	72726578	74142268	ELN,LIMK1,BCL7B,TBL2,EIF4H,RFC2,LAT2,CLIP2
	deletion	9p	0	39167302	multiple
	deletion	11p	0	43363699	multiple
	deletion	17q11.2	29084332	30374582	NF1,RAB11FIP4,C17orf79,UTP6,C17orf42,ADAP2,RNF135
	deletion	Xp11.4	38707324	40303082	BCOR
7	deletion	5q14.3	88184587	88812408	MEF2C(disrupted)
	deletion	6q26	162493994	162552319	PARK2(disrupted)
	deletion	6q25.3	158725303	158873681	TULP4 (disrupted)
	deletion	6q23.3	135375146	135429926	HBS1L(disrupted)
	deletion	7p12.2	50367431	50455015	IKZF1
	duplication	11q24.1	122738079	122909318	CRTAM, C11orf63,BSX
8	deletion	11q14.1	81397072	81768536	BC041900
	trisomy	chromosome 21			multiple
9	deletion	5q33.3	158445552	158517178	EBF1(disrupted)
	deletion	6q23.3	135375146	135456365	HBS1L(disrupted)
	deletion	7p12.2	50367431	50459333	IKZF1
	deletion	7q11	64679717	64974722	INTS4L1,ZNF92,INTS4L2
	deletion	9q21.11	70984481	71497249	PGM5,C9orf71,FAM122A(disrupted)
	duplication	12q24.31	123223418	123350783	HIP1R,CCDC62,DENR

continued on the next page

continued from the previous next page

10	deletion	3p22.3	35695821	35768588	ARPP21(disrupted)
	deletion	3q13.2	112068548	112224778	CD200,BTLA
	duplication	3q21.1	123212761	123259089	PTPLB
	deletion	3q25.1	151951166	152055052	MBNL1(disrupted)
	deletion	4q25	109010394	109089344	LEF1(disrupted)
	deletion	5q35.1	172271401	172300904	ERG1C1(disrupted)
	deletion	7p12.2	50427655	50459333	IKZF1
	deletion	7q22.3	104592257	104666801	MLL5(disrupted)
	duplication	8q12.1	58006167	58488946	C8ORF71
	deletion	9p21.3	21983069	22008596	CDKN2A
	deletion	10p13	14555157	14784688	FAM107(disrupted)
	deletion	11q22.3	104643704	104852147	CASP12,CASP4
	deletion	12q21.33	92274591	92539427	BTG1
	deletion	19p13.11-19p12	19764889	21591409	multiple
	deletion	20p12.1	14685390	14983888	MACROD2(disrupted)
11	deletion	5q14.2-5q35.3	81868013	180712204	multiple
	duplication	6q16.1-6q27	95831585	170921030	multiple
	duplication	10p12.31	21634368	21982346	miR-1915,C10orf140,MLLT10(disrupted)
	duplication	12q15	70610813	70718596	CNOT2(disrupted)
	duplication	Xq27.2	140705348	141008991	MGAEC3,MGAEC1,SPANXA1, SPANXA2,SPANXD,SPANXE
12	deletion	21q22.12	36208820	36354450	RUNX1(disrupted)