

Supplementary Information for

The impact of age and number of mutations on the size of clonal hematopoiesis

Kai Wang^{a,1}, Wen Zhang^{b,1}, Li Yi^{a,1}, Ming Zhao^{a,e}, Pengyu Li^a, Meihong Fu^a, Rong Lin^{c,d}, Yongmei Zhu^e, Jianfeng Li^e, Weiping Yang^a, Hai Fang^e, Zhu Chen^{e,*}, Wangwei Cai^{b,*}, Ruibao Ren^{a,e,*}

^a International Center for Aging and Cancer, Department of Hematology of The First Affiliated Hospital, Hainan Medical University, Haikou, 571199, China; ^b Department of Biochemistry and Molecular Biology, Key Laboratory of Molecular Biology, School of Basic Medicine and Life Sciences, Hainan Medical University, Haikou, 571199, China; ^c Department of Biology, School of Basic Medicine and Life Sciences, Hainan Medical University, Haikou, 571199, China; ^d Center of Forensic Medicine of Hainan Medical University, Hainan Provincial Academician Workstation (tropical forensic medicine), Hainan Provincial Tropical Forensic Engineering Research Center, Haikou, 571199, China; ^e Shanghai Institute of Hematology, State Key Laboratory for Medical Genomics, National Research Center for Translational Medicine, Ruijin Hospital affiliated to Shanghai Jiao Tong University School of Medicine, Shanghai, 200025, China.

¹ These authors contribute equally to the present work.

* Correspondence: rbren@sjtu.edu.cn; caiww591020@163.com; zchen@stn.sh.cn

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The supplemental information text.
Figure S1
Tables 1 and 2

Other supplementary materials for this manuscript include the following:

Excel file (Supplemental Dataset)

Fig. S1.

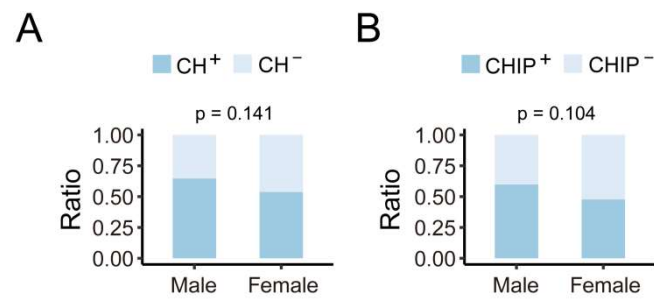


Figure S1. Comparison of incidence of CH or CHIP between males and females

A. Stacked bar plot of individuals with CH (CH⁺) and individuals without CH (CH⁻) in the males versus females from both age population. Chi-square test was used for statistical analysis. B. Stacked bar plot of individuals with (CHIP⁺) and individuals without CHIP (CHIP⁻) in the males versus females from both age population. Chi-square test was used for statistical analysis.

Table S1.

Table S1. Genes included in the targeted NGS panel for CH detection

Items	Gene and locus description						Number of probes
CH related genes	ASXL1***	DNMT3A***	GNAS**	NF1*	SETBP1**	STAG2*	1150
	ATM*	ELANE	GNB1**	NPM1*	SETD2**	STAT3*	
	BCOR**	ETV6*	HAX1*	NRAS*	SETDB1**	TET2***	
	CALR*	EZH2*	IDH1*	PIGA*	SF3B1**	TP53**#	
	CBL**	FLT3*	IDH2**	PPM1D**	SH2B3**	U2AF1*	
	CEBPA*	G6PC3*	JAK2**#	PTPN11*	SMC1A*	ZRSR2*	
	CREBBP**	GATA2*	KRAS*	RAD21*	SMC3*		
	CUX1**	GFI1*	MPL*	RUNX1*	SRSF2**		
HLA gene	HLA-A	HLA-B	HLA-C	HLA-DRB1	HLA-DQB1	HLA-DPB1	212
Q&C probes	100 rare mutations of Chinese population, germline SNP sites, VAF = 1-3%						170

***SNV/INDEL significantly associated; **SNV/INDEL associated; **#SNV/INDEL/CNV associated; *SNV/INDEL other related diseases and clonal hematopoiesis updated in progression

NGS: next-generation sequencing ; SNV: single nucleotide variation; INDEL: short insertions and deletions; CNV: copy number variation

Table S2.**Table S2. List of CH related gene mutations detected with the targeted NGS panel and general information of the studied cohort**

Sample ID	Sex	Age	Age Intervals	Groups	Mutated Genes	Mutation Locus	VAF	Mutation Type
698	F	97	90-99	Longevous	DNMT3A	p.Phe640fs	3.5	Frameshift
698	F	97	90-99	Longevous	DNMT3A	p.Trp314*	5.7	Nonsense
698	F	97	90-99	Longevous	TET2	c.3954+1G>A	6.8	Splicing
698	F	97	90-99	Longevous	TET2	p.Asp1376Asn	4.2	Missense
701	M	97	90-99	Longevous	TP53	p.Arg156Gly	12.7	Missense
702	M	99	90-99	Longevous	DNMT3A	p.Arg882His	9.9	Missense
702	M	99	90-99	Longevous	TET2	p.Tyr1569*	4.7	Nonsense
702	M	99	90-99	Longevous	ASXL1	p.Gly646fs	4.7	Frameshift
704	M	99	90-99	Longevous	TET2	p.Ala1508fs	5.9	Frameshift
704	M	99	90-99	Longevous	ASXL1	p.Ser1064fs	2.4	Frameshift
706	F	95	90-99	Longevous	TET2	p.Ser1870Leu	7.8	Missense
709	M	97	90-99	Longevous	DNMT3A	p.Arg736His	2	Missense
713	F	99	90-99	Longevous	DNMT3A	p.Pro700Leu	2	Missense
715	F	98	90-99	Longevous	TET2	p.Ile1175Asn	2.9	Missense
719	M	96	90-99	Longevous	RAD21	p.Lys26Arg	2.3	Missense
725	F	110	100-110	Longevous	TET2	p.Gly1192fs	3.5	Frameshift
725	F	110	100-110	Longevous	PPM1D	p.Leu450fs	4	Frameshift
728	M	101	100-110	Longevous	DNMT3A	p.Phe731Leu	3.7	Missense
728	M	101	100-110	Longevous	TET2	p.Arg544*	4.4	Nonsense
730	F	101	100-110	Longevous	CBL	p.Lys382Glu	11.5	Missense
730	F	101	100-110	Longevous	CBL	p.Cys416Ser	5.5	Missense
736	F	96	90-99	Longevous	DNMT3A	p.Pro849fs	35.3	Frameshift
736	F	96	90-99	Longevous	TET2	p.Ser391fs	40.5	Frameshift
736	F	96	90-99	Longevous	TET2	p.Pro419fs	19.9	Frameshift
736	F	96	90-99	Longevous	TET2	p.Arg1366fs	6.6	Frameshift
736	F	96	90-99	Longevous	SF3B1	p.Lys700Glu	6.5	Missense
738	F	97	90-99	Longevous	TET2	p.Asn1774fs	2.4	Frameshift
743	F	107	100-110	Longevous	TET2	p.Leu615fs	1.5	Frameshift
745	M	107	100-110	Longevous	TET2	p.Pro1889Arg	4	Missense
745	M	107	100-110	Longevous	SF3B1	p.Lys666Asn	4.2	Missense
747	F	102	100-110	Longevous	TET2	p.Leu1340Pro	7.8	Missense
755	M	95	90-99	Longevous	DNMT3A	p.Arg635Trp	2.9	Missense
757	F	107	100-110	Longevous	TET2	p.Cys353fs	1.8	Frameshift
762	F	100	100-110	Longevous	SETDB1	p.Arg620His	1.9	Missense
764	F	95	90-99	Longevous	STAG2	p.Asp596His	5	Missense
767	M	103	100-110	Longevous	DNMT3A	p.Leu905Pro	2.2	Missense
767	M	103	100-110	Longevous	DNMT3A	p.Arg556Ser	4.4	Missense
767	M	103	100-110	Longevous	RAD21	p.Tyr617*	18.9	Nonsense
767	M	103	100-110	Longevous	JAK2	p.Val617Phe	37.7	Missense
772	M	98	90-99	Longevous	TET2	p.Gln644*	2	Nonsense
772	M	98	90-99	Longevous	ASXL1	p.Gly646fs	12.2	Frameshift
774	M	97	90-99	Longevous	DNMT3A	p.Leu347Arg	2.8	Missense

776	F	96	90-99	Longevous	TET2	p.Thr1397Ile	1.9	Missense
783	M	99	90-99	Longevous	DNMT3A	p.Arg736Ser	21.9	Missense
783	M	99	90-99	Longevous	TET2	p.Gln491*	10.5	Nonsense
787	F	110	100-110	Longevous	TET2	p.Arg1216*	5.1	Nonsense
787	F	110	100-110	Longevous	STAG2	p.Ile899Asn	5.5	Missense
789	M	100	100-110	Longevous	DNMT3A	p.Arg803Gly	6.8	Missense
789	M	100	100-110	Longevous	DNMT3A	p.Cys494*	2.7	Nonsense
789	M	100	100-110	Longevous	DNMT3A	p.Gln237*	4.6	Nonsense
796	M	97	90-99	Longevous	ASXL1	p.Leu775fs	1.7	Frameshift
796	M	97	90-99	Longevous	PPM1D	p.Arg581*	2.1	Nonsense
800	F	106	100-110	Longevous	DNMT3A	p.Pro904Leu	1.9	Missense
800	F	106	100-110	Longevous	DNMT3A	p.Asp668Ala	2.2	Missense
802	F	95	90-99	Longevous	TET2	p.Asn1805fs	4.7	Frameshift
804	M	95	90-99	Longevous	DNMT3A	p.Trp409*	1.5	Nonsense
805	F	98	90-99	Longevous	SETD2	p.Cys805Phe	2	Missense
806	M	96	90-99	Longevous	NRAS	p.Gly13Cys	10.1	Missense
812	F	98	90-99	Longevous	DNMT3A	p.Pro849fs	8.8	Frameshift
812	F	98	90-99	Longevous	DNMT3A	p.Arg771*	2.4	Nonsense
814	M	98	90-99	Longevous	TET2	p.Pro1194Arg	2	Missense
820	F	96	90-99	Longevous	TET2	p.Trp1291Gly	3.8	Missense
820	F	96	90-99	Longevous	TET2	p.Ser271*	3.6	Nonsense
820	F	96	90-99	Longevous	TET2	p.Lys753Ilefs*16	3.1	Frameshift
820	F	96	90-99	Longevous	TET2	p.Tyr1245Leufs*22	2.8	Frameshift
820	F	96	90-99	Longevous	SF3B1	p.Arg775Gln	2.6	Missense
820	F	96	90-99	Longevous	SETD2	p.Gly412Asp	2.7	Missense
822	M	99	90-99	Longevous	ASXL1	p.Arg786Serfs*28	9.1	Frameshift
832	F	99	90-99	Longevous	DNMT3A	p.Phe868Ser	2.9	Missense
832	F	99	90-99	Longevous	STAT3	p.Lys658Arg	3.1	Missense
824	F	104	100-110	Longevous	DNMT3A	c.855+1G>A	3.6	Splicing
824	F	104	100-110	Longevous	TET2	p.Lys1339*	3.6	Nonsense
824	F	104	100-110	Longevous	TET2	p.Ile1873Thr	2.1	Missense
826	F	105	100-110	Longevous	DNMT3A	p.Tyr660Asn	4.8	Missense
826	F	105	100-110	Longevous	TET2	p.Ser1290Thrfs*69	2	Frameshift
828	F	97	90-99	Longevous	TET2	p.Leu1855Trpfs*32	34.1	Frameshift
828	F	97	90-99	Longevous	TET2	p.Asp1427Glufs*21	12.1	Frameshift
828	F	97	90-99	Longevous	TET2	p.Glu1755*	2.5	Nonsense
830	F	102	100-110	Longevous	DNMT3A	p.Arg544Valfs*107	1.6	Frameshift
833	F	104	100-110	Longevous	ASXL1	p.Gln708*	2.4	Nonsense
836	F	108	100-110	Longevous	DNMT3A	p.Arg882Cys	5.3	Missense
836	F	108	100-110	Longevous	TET2	p.Arg1465*	2.4	Nonsense
840	F	104	100-110	Longevous	DNMT3A	p.Phe521Leufs*18	13	Frameshift
840	F	104	100-110	Longevous	TET2	p.Lys1905Glu	10.6	Missense
840	F	104	100-110	Longevous	CBL	p.Met400Ilefs*30	6.1	Frameshift
842	F	108	100-110	Longevous	DNMT3A	p.Leu295Pro	2	Missense
842	F	108	100-110	Longevous	ASXL1	p.Asn893*	2	Nonsense
845	M	96	90-99	Longevous	GNAS	p.Pro308Leu	2.9	Missense
847	M	99	90-99	Longevous	TET2	p.Cys1193Tyr	8.2	Missense
847	M	99	90-99	Longevous	TET2	p.Leu1248Pro	4.8	Missense
847	M	99	90-99	Longevous	ASXL1	p.Trp796Glyfs*22	17.7	Frameshift
847	M	99	90-99	Longevous	SH2B3	p.Ser297*	7.1	Nonsense

851	F	96	90-99	Longevous	DNMT3A	p.Trp581Glyfs*70	8.4	Frameshift
853	F	98	90-99	Longevous	TET2	p.Cys1273Phe	1.9	Missense
854	M	103	100-110	Longevous	CREBBP	p.Arg1173Gln	2.8	Missense
862	F	99	90-99	Longevous	ASXL1	p.Tyr591*	21.8	Nonsense
862	F	99	90-99	Longevous	GNAS	p.Arg844His	7.4	Missense
862	F	99	90-99	Longevous	CUX1	p.Leu112Arg	3.6	Missense
864	F	100	100-110	Longevous	TP53	p.Val216Met	1.8	Missense
864	F	100	100-110	Longevous	SF3B1	p.Lys666Asn	2.1	Missense
867	F	95	90-99	Longevous	DNMT3A	p.Ala610Gly	2.3	Missense
867	F	95	90-99	Longevous	DNMT3A	c.2323-2A>T	2	Splicing
867	F	95	90-99	Longevous	DNMT3A	p.Arg899Cys	1.7	Missense
869	F	102	100-110	Longevous	DNMT3A	p.Arg729Gly	1.7	Missense
872	F	101	100-110	Longevous	ASXL1	p.Gly646Trpfs*12	4.1	Frameshift
874	F	99	90-99	Longevous	TET2	p.Phe776Leufs*5	1.6	Frameshift
874	F	99	90-99	Longevous	GNAS	p.Arg844Cys	2.3	Missense
876	F	95	90-99	Longevous	TET2	p.Arg1366His	11.1	Missense
876	F	95	90-99	Longevous	NF1	p.Lys1444Glu	2.3	Missense
877	F	104	100-110	Longevous	TET2	p.Ile1873Thr	4.9	Missense
877	F	104	100-110	Longevous	STAG2	p.Leu1247Arg	2.3	Missense
880	F	98	90-99	Longevous	DNMT3A	p.Tyr584*	3.5	Nonsense
880	F	98	90-99	Longevous	TET2	p.Ala1341Glu	2.8	Missense
880	F	98	90-99	Longevous	TET2	p.Thr1047Tyrfs*11	1.8	Frameshift
881	F	96	90-99	Longevous	TET2	p.Leu862Alafs*9	6.4	Frameshift
884	F	104	100-110	Longevous	TET2	p.Gln1546*	8.9	Nonsense
884	F	104	100-110	Longevous	TET2	p.Glu711*	2.9	Nonsense
884	F	104	100-110	Longevous	ASXL1	p.Glu635Argfs*15	10.2	Frameshift
885	M	99	90-99	Longevous	TET2	p.Glu583*	37.9	Nonsense
887	F	96	90-99	Longevous	TET2	p.Gln317Argfs*30	2.2	Frameshift
887	F	96	90-99	Longevous	TET2	p.Pro761Leufs*52	1.7	Frameshift
887	F	96	90-99	Longevous	TP53	c.994-1G>A	10.8	Splicing
890	F	99	90-99	Longevous	JAK2	p.Val617Phe	7.2	Missense
893	F	95	90-99	Longevous	BCOR	p.Glu867*	9	Nonsense
896	F	103	100-110	Longevous	DNMT3A	p.Ala410Val	19.7	Missense
896	F	103	100-110	Longevous	SH2B3	p.Arg261Trp	2.9	Missense
897	F	95	90-99	Longevous	TET2	p.Ile1873Tyr	9.4	Missense
898	M	95	90-99	Longevous	TET2	p.Gln461*	2.1	Nonsense
900	M	95	90-99	Longevous	TET2	p.Arg1262Trp	4.3	Missense
900	M	95	90-99	Longevous	CBL	c.1228-1G>A	1.8	Splicing
900	M	95	90-99	Longevous	SRSF2	p.Arg184Lys	4.1	Missense
902	F	96	90-99	Longevous	TET2	p.His1380Tyr	29	Missense
904	F	100	100-110	Longevous	DNMT3A	p.Arg771*	1.9	Nonsense
904	F	100	100-110	Longevous	TET2	p.Ser420*	3.6	Nonsense
906	M	105	100-110	Longevous	TET2	p.Cys973Trpfs*3	3.9	Frameshift
906	M	105	100-110	Longevous	TET2	p.Gln706*	3.7	Nonsense
906	M	105	100-110	Longevous	PPM1D	p.Arg552*	4.9	Nonsense
906	M	105	100-110	Longevous	PPM1D	p.Cys603*	2.1	Nonsense
906	M	105	100-110	Longevous	IDH2	p.Arg140Gln	2.5	Missense
907	F	100	100-110	Longevous	DNMT3A	p.Ile705del	13.2	Deletion
907	F	100	100-110	Longevous	DNMT3A	p.Leu411Pro	10.4	Missense
907	F	100	100-110	Longevous	TET2	p.His1817Thrfs*5	7.9	Frameshift

907	F	100	100-110	Longevous	TET2	p.Val198Lysfs*6	5.3	Frameshift
907	F	100	100-110	Longevous	SF3B1	p.Lys700Glu	9.9	Missense
907	F	100	100-110	Longevous	GNAS	p.Ala537Val	9.3	Missense
909	F	102	100-110	Longevous	DNMT3A	p.Tyr533Cys	12.7	Missense
909	F	102	100-110	Longevous	DNMT3A	p.Trp330*	3.9	Nonsense
909	F	102	100-110	Longevous	TET2	p.Leu1326_Gln1327de linsPhe*	4.2	Deletion
910	M	92	90-99	Longevous	TET2	p.Phe387fs	3.3	Frameshift
910	M	92	90-99	Longevous	U2AF1	p.Gln157Pro	3.2	Missense
910	M	92	90-99	Longevous	RUNX1	p.Tyr281Cys	5.1	Missense
911	F	90	90-99	Longevous	DNMT3A	p.Cys818Phe	1.7	Missense
911	F	90	90-99	Longevous	ASXL1	p.Ala735Leufs*9	2.1	Frameshift
DZ1	F	87	80-89	Common	DNMT3A	p.Arg749His	24.7	Missense
DZ1	F	87	80-89	Common	TET2	p.Asn281fs	23.3	Frameshift
DZ4	M	85	80-89	Common	DNMT3A	p.Cys494*	2	Nonsense
DZ4	M	85	80-89	Common	DNMT3A	p.Leu347Arg	2	Missense
DZ4	M	85	80-89	Common	TET2	p.Gly1370fs	7	Frameshift
DZ10	M	81	80-89	Common	PPM1D	p.Pro518fs	2.1	Frameshift
DZ14	M	80	80-89	Common	DNMT3A	p.Trp409*	12.7	Nonsense
DZ25	M	65	60-69	Common	TET2	p.Arg1201fs	1.7	Frameshift
DZ27	F	80	80-89	Common	DNMT3A	p.Asn430fs	18.8	Frameshift
DZ27	F	80	80-89	Common	TET2	p.Asn1581fs	19.1	Frameshift
DZ27	F	80	80-89	Common	TET2	p.Tyr1751fs	5.9	Frameshift
DZ33	F	85	80-89	Common	ASXL1	p.Tyr974fs	8.1	Frameshift
DZ33	F	85	80-89	Common	U2AF1	p.Gln157Pro	10.3	Missense
DZ39	F	81	80-89	Common	SETD2	p.Lys1020fs	2.2	Frameshift
DZ40	F	87	80-89	Common	TET2	p.His1881Arg	2	Missense
DZ42	F	89	80-89	Common	DNMT3A	p.Phe732del	3.6	Deletion
DZ43	M	79	70-79	Common	TET2	p.Tyr1579*	1.7	Nonsense
DZ43	M	79	70-79	Common	ASXL1	p.Gly629fs	32.8	Frameshift
DZ47	M	84	80-89	Common	DNMT3A	p.Trp297*	3.9	Nonsense
DZ77	F	82	80-89	Common	DNMT3A	c.1554+1G>A	2.5	Splicing
DZ77	F	82	80-89	Common	GNB1	p.Lys57Glu	2.1	Missense
DZ84	F	71	70-79	Common	DNMT3A	p.Thr645Ala	5	Missense
DZ90	M	71	70-79	Common	DNMT3A	p.Pro799Ser	3.5	Missense
DZ90	M	71	70-79	Common	DNMT3A	p.His588fs	8	Frameshift
DZ90	M	71	70-79	Common	RAD21	p.Asn151fs	1.9	Frameshift
DZ101	F	80	80-89	Common	DNMT3A	p.Phe755Cys	2.2	Missense
DZ102	M	68	60-69	Common	ASXL1	p.Gln778*	4.1	Nonsense
DZ104	M	65	60-69	Common	TET2	p.Arg1383Ser	2.1	Missense
DZ105	M	78	70-79	Common	DNMT3A	p.Lys429fs	15.6	Frameshift
DZ105	M	78	70-79	Common	DNMT3A	p.Trp313*	4	Nonsense
DZ106	M	83	80-89	Common	ASXL1	p.Glu602*	1.8	Nonsense
DZ106	M	83	80-89	Common	PPM1D	p.Lys480*	1.7	Nonsense
DZ108	M	75	70-79	Common	SETD2	p.Ile1893Phe	3.2	Missense
DZ111	F	66	60-69	Common	DNMT3A	p.Gly332Glu	5.9	Missense
DZ114	F	78	70-79	Common	DNMT3A	p.Ile705Ser	3.7	Missense
DZ114	F	78	70-79	Common	TET2	p.Gln323Asnfs*24	1.9	Frameshift
DZ115	F	65	60-69	Common	DNMT3A	p.Lys299Asn	2	Missense
DZ117	F	86	80-89	Common	DNMT3A	p.Pro700Leu	1.8	Missense

DZ120	M	65	60-69	Common	DNMT3A	p.Leu754His	2.3	Missense
DZ124	F	83	80-89	Common	TET2	p.Cys1464Alafs*6	14.1	Frameshift
DZ131	M	69	60-69	Common	DNMT3A	p.Met880Val	12.5	Missense
DZ131	M	69	60-69	Common	DNMT3A	p.Gln606Leufs*3	6.9	Frameshift
DZ131	M	69	60-69	Common	ASXL1	p.Gly646Trpfs*12	11.9	Frameshift
DZ136	F	83	80-89	Common	DNMT3A	p.Ile470Hisfs*17	9.6	Frameshift
DZ136	F	83	80-89	Common	TET2	p.Ser1284Phe	4.4	Missense
DZ137	F	76	70-79	Common	DNMT3A	p.Arg635Trp	25.7	Missense
DZ137	F	76	70-79	Common	DNMT3A	p.Ala254Profs*60	1.8	Frameshift
DZ137	F	76	70-79	Common	DNMT3A	p.Leu295Pro	2.1	Missense
DZ137	F	76	70-79	Common	TET2	p.Ile1873Thr	2.2	Missense
DZ144	M	80	80-89	Common	DNMT3A	c.855+1G>A	4	Splicing
DZ148	M	74	70-79	Common	SF3B1	p.Lys666Met	4.1	Missense
DZ149	F	84	80-89	Common	TET2	p.Gln273*	6.3	Nonsense
DZ149	F	84	80-89	Common	TET2	p.Gly1861Glufs*26	5	Frameshift
DZ149	F	84	80-89	Common	SH2B3	p.Arg392Pro	7.4	Missense
DZ150	M	65	60-69	Common	DNMT3A	p.Arg899His	3.5	Missense
DZ153	F	68	60-69	Common	GATA2	p.Pro444Leu	1.9	Missense
DZ155	M	65	60-69	Common	DNMT3A	p.Met682Cysfs*23	3	Frameshift
DZ155	M	65	60-69	Common	DNMT3A	c.1015-1G>C	3.3	Splicing
DZ156	M	70	70-79	Common	DNMT3A	p.Trp313*	3.2	Nonsense
DZ156	M	70	70-79	Common	TET2	p.Gln1545*	3.7	Nonsense
DZ156	M	70	70-79	Common	ASXL1	p.Arg1190Thr	4	Missense
DZ158	F	65	60-69	Common	SMC3	p.Gln331Leu	36.4	Missense
DZ162	M	72	70-79	Common	STAT3	p.Thr389Ala	1.9	Missense
DZ164	F	75	70-79	Common	TET2	p.Ser1630*	3	Nonsense
DZ166	F	66	60-69	Common	DNMT3A	p.Arg882Ser	2	Missense
DZ173	F	83	80-89	Common	DNMT3A	p.Ser312Phe	16.9	Missense
DZ173	F	83	80-89	Common	TET2	p.Arg1516*	6.3	Nonsense
DZ174	F	70	70-79	Common	TET2	p.His1912Glufs*12	3	Frameshift
DZ176	M	69	60-69	Common	DNMT3A	p.Arg882His	5.5	Missense
DZ178	F	68	60-69	Common	DNMT3A	p.Cys514Phe	1.9	Missense
DZ178	F	68	60-69	Common	RAD21	p.Arg586Gln	2.1	Missense
DZ179	F	83	80-89	Common	DNMT3A	p.Cys497Ser	2.2	Missense
DZ179	F	83	80-89	Common	TET2	p.Gln1138*	1.8	Nonsense
DZ180	M	86	80-89	Common	TET2	p.GlnQ530*	2.7	Nonsense
DZ183	F	85	80-89	Common	TP53	p.Val216Met	2.9	Missense
DZ188	M	65	60-69	Common	DNMT3A	p.Gln534*	2.4	Nonsense
DZ189	M	89	80-89	Common	PPM1D	p.Trp427*	2.6	Nonsense
DZ190	F	65	60-69	Common	DNMT3A	p.Tyr533Cys	2.7	Missense
DZ193	M	80	80-89	Common	TET2	p.Arg506*	2.6	Nonsense
DZ194	M	80	80-89	Common	NRAS	p.Tyr157Leufs*19	2.4	Frameshift
DZ194	M	80	80-89	Common	ZRSR2	p.Tyr374*	1.7	Nonsense
DZ195	F	70	70-79	Common	DNMT3A	p.Arg882Cys	5.4	Missense
DZ195	F	70	70-79	Common	DNMT3A	p.Phe414Leufs*7	8	Frameshift
DZ197	M	65	60-69	Common	CBL	p.Tyr774*	15.5	Nonsense