

**Table S2. Mutation frequency of WES data for AYA cancers**

	AYA01	AYA02	AYA04	AYA06	AYA07	AYA10
<b>Somatic mutation/Mb</b>	0.37	0.69	1.87	0.56	9.37	0.39
<b>Number of somatic mutations</b>	26	49	133	40	665	28
<b>Synonymous SNV</b>	1	8	28	3	157	5
<b>Nonsynonymous SNV</b>	10	13	83	15	441	12
<b>Nonsense</b>	3	1	6	1	5	0
<b>Stoploss</b>	0	0	0	0	2	0
<b>Splicing mutation</b>	2	2	1	2	14	1
<b>ncRNA mutation</b>	3	8	8	5	34	0
<b>Indels</b>	7	17	7	14	12	10
<b>DNA repair genes /Mutation context*</b>	TDG /ns	TP53 /ns	TP53 /sp	MSH3 /ns	DDB1/ns LIG3/ns MNAT1/ns POLE/ns POLG/ns POLQ/ns	-
<b>Allele freq. of DNA repair genes</b>	0.05	0.58	0.28	0.1	0.06 (DDB1) 0.06 (LIG3) 0.08 (MNAT1) 0.06 (POLE) 0.06 (POLG) 0.27 (POLQ)	-

\*ns- nonsynonymous SNV, sp: splicing alteration