

Supporting Information

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Table S1. Analysis of SHM in individual APE- and UNG-deficient mice

Genotype	No. of mice	Total mutations	Total nt present in mutated sequences	Mutation frequency ($\times 10^{-3}$)	% of mutations at C:G bp corrected ^{*,†}	% of C:G mutations that are transitions A:T bp corrected ^{*,†}	% of mutations at A:T bp corrected ^{*,†}	Ratio of A:T mutations to mutations corrected ^{*,†}	% of mutations at WRC/GYW hotspots [‡]	Indels [§]	Frequency of indels ($\times 10^{-4}$) [§]
<i>Wildtype</i>	1	258	13,804	18.7	45.5	54.5	54.5	2.5	19.6	3	2.173
	2	191	13,305	14.4	44.9	58.6	55.1	1.6	18.4	3	2.255
	3	1,510	36,482	41.4	39.8	68.8	60.2	2.5	18.1	3	0.822
	4	176	9,367	18.8	35.5	69.0	64.5	2.3	14.0	2	2.135
	5	1,110	39,922	27.8	39.1	57.0	60.9	1.7	17.2	5	1.252
	6	732	39,350	18.6	41.2	51.1	58.8	1.6	17.2	10	2.541
	7	662	39,440	16.8	41.4	50.7	58.6	1.7	19.1	6	1.521
Total/AVG	4,639	191,670	22.4	41.1	58.5	58.9	58.9	2.0	17.7	32	1.814
<i>apex1^{+/-}</i>	1	178	11,314	15.7	43.3	59.6	56.7	1.8	26.3	2	1.768
	2	216	9,663	22.4	37.1	66.7	62.9	1.1	17.5	6	6.209
	3	556	37,468	14.8	48.1	55.6	51.9	1.6	15.5	5	1.334
	4	299	19,720	15.2	51.0	60.5	49.0	1.1	20.6	1	0.507
	5	1,091	39,389	27.7	45.0	58.7	55.0	1.6	21.6	5	1.269
Total/AVG	2,340	117,554	19.2	44.9	60.2	55.1	55.1	1.4	20.3	19	2.218
<i>P =</i>				0.5157	0.1540	0.6749	0.1540	0.0402	0.1614	—	0.6600
<i>apex2^{Y/-}</i>	1	206	24,618	8.4	52.7	67.2	47.3	1.1	23.0	3	1.219
	2	324	31,059	10.4	57.2	67.9	42.8	2.6	25.1	0	0.000
	3	418	20,143	20.8	49.1	67.2	50.9	2.5	20.3	4	1.986
	4	203	27,115	7.5	53.2	59.7	46.8	2.3	24.3	0	0.000
	5	262	32,045	8.1	46.4	54.7	53.6	1.3	26.5	2	0.624
Total/AVG	1,413	134,980	11.1	51.7	63.3	63.3	48.3	2.0	23.8	9	0.077
<i>P =</i>				0.0373	0.0006	0.2670	0.0006	0.9920	0.0004	—	0.0327
<i>apex1^{+/-}apex2^{Y/-}</i>	1	93	9,860	9.4	67.2	81.3	32.8	1.6	23.0	2	2.028
	2	266	18,734	14.2	56.8	68.6	43.2	2.2	21.6	0	0.000
	3	472	44,863	10.5	51.6	61.1	48.4	2.0	21.2	3	0.669
	4	363	38,947	9.3	47.9	65.4	52.1	2.0	22.6	6	1.541
	5	585	41,903	14.0	45.4	56.3	54.6	1.2	22.5	3	0.716
Total/AVG	1,779	154,307	11.5	53.8	66.5	66.5	46.2	1.8	22.2	14	0.991
<i>P =</i>				0.0312	0.0051	0.1351	0.0051	0.5135	0.0004	—	0.0717
<i>ung^{-/-}</i>	1	751	40,631	18.5	52.1	90.5	47.9	2.3	29.7	4	0.984
	2	1,043	43,877	23.8	54.2	88.3	45.8	1.4	26.4	1	0.228
	3	400	22,185	17.8	56.9	93.3	43.1	1.4	30.3	2	0.902
Total/AVG	2,194	106,693	20.0	54.4	90.7	90.7	45.6	1.7	28.8	7	0.705
<i>P =</i>				0.6948	0.0003	0.0008	0.0003	0.4490	<0.0001	—	0.0241
<i>ung^{-/-}apex1^{+/-}</i>	1	543	28,101	19.3	62.2	94.8	37.8	1.4	31.5	1	0.356
	2	740	43,877	16.9	50.5	92.3	49.5	1.8	24.5	5	1.140
	3	404	38,947	10.4	62.8	90.6	37.2	1.4	32.0	3	0.770
Total/AVG	1,687	110,925	15.5	58.5	92.6	92.6	41.5	1.6	29.3	9	0.755
<i>P vs. WT</i>				0.2747	0.0005	0.0001	0.0005	0.1762	0.0002	—	0.0284
<i>P vs. UNG</i>				0.2401	0.3870	0.5213	0.3870	0.6272	0.8534	—	0.8854

