

**Table 2. Mutation spectrum at the *Hprt* locus in wild-type and *Polk*<sup>-/-</sup> ES cells**

Mutant no.*	Position <sup>†</sup>	Mutation <sup>‡</sup>	Sequence <sup>§</sup>	Purine strand	Amino acid change
<i>Polk</i> <sup>+/+</sup> (TT2)					
25-56	134	G→A	cagGtta	NT	G16D
25-2	152	A→G	caaAaca	T	F22S
20-10	175	<b>G→T</b>	gccGagg	NT	E30STOP
19-1	204	A→T	tccAtga	T	H39Q
*19-6	206	G→A	atgGact	NT	G40E
25-55	208	G→C	tcaGtcc	T	L41V
*12-14	217	G→C	atgGaca	NT	D44H
25-26	217	<b>G→T</b>	atgGaca	NT	D44Y
25-54	218	A→G	tggAcag	NT	D44G
25-15	284	G→A	tctGtgt	NT	C66Y
25-52	295	G→A	aagGggg	NT	G70R
14-2	318	<b>G→T</b>	cagGtca	T	D77E
*14-9	319	G→A	gcaGgtc	T	No change
14-6	319	G→C	gcaGgtc	T	L78V
25-19	320	A→G	cgaAggt	T	L78P
20-1	328	A→G	tgtAatc	T	Y81H
*14-9	457	A→G	tcaActt	NT	T124A
14-1	479	A→G	atcAaga	T	L131S
25-16	499	<b>G→T</b>	attGaca	NT	D138Y
25-10	551	G→C	ttgGggc	T	P155R
25-51	573	G→C	caaGctt	T	S162R
25-8	583	A→G	gtgAaaa	NT	K166E
15-1	608	A→C	gatAcag	NT	Y174S
15-6	635	A→G	ggaAttt	T	I183T
25-18	649	<b>G→T</b>	tttGttg	NT	V188F
25-17	656	<b>G→T</b>	tTgGata	NT	G190V
6-4	688	<b>G→T</b>	aggGatt	NT	D201Y
15-9	713	<b>G→T</b>	ttaGtga	NT	S209I
25-52	713	<b>G→T</b>	ttaGtga	NT	S209I
*19-6	717	A→G	tgaAact	NT	No change
25-13	722	G→A	ctgGaaa	NT	G212E
7-2	274	-1G	attGtgg	NT	Frameshift
15-2	586-587	G2 > G1	aaaGGacc	NT	Frameshift
25-9	667	-1G	cttGact	NT	Frameshift
25-7	?	v			Deletion of 91 bp at 3' of exon 1
16-2	?				Complete deletion of exons 2 and 3
20-7	?				Complete deletion of exon 3
25-1	?				Deletion of 111 bp at 3' of exon 3
25-5					Complete deletion of exons 7 and 8
*12-14	?				SINE insertion in exon 2
<i>Polk</i> <sup>-/-</sup> (A71)					
30-4	127	<b>G→T</b>	gatGaac	NT	E14STOP
30-1	175	<b>G→T</b>	gccGagg	NT	E30STOP
23-4	183	<b>G→T</b>	tttGgaa	NT	L32F
30-6	190	G→A	aaaGtgt	NT	V35M

30-38	200	<b>G→T</b>	tgaGgaa	T	P38H
23-14	200	G→A	tgaGgaa	T	P38L
30-10	205	<b>G→T</b>	catGgac	NT	E40STOP
18-3	217	<b>G→T</b>	atgGaca	NT	D44Y
30-7	221	<b>G→T</b>	acaGgac	NT	R45M
*17-2	239	G→C	ctcGaga	NT	R51P
30-23	253	<b>G→T</b>	aagGaga	NT	Q56STOP
17-5	259	<b>G→T</b>	atgGgag	NT	G58STOP
30-18	265	<b>G→T</b>	gatGgcc	T	H60N
30-2	270	<b>G→T</b>	aatGtga	T	H61Q
*17-7	278	<b>G→T</b>	aggGcca	T	A64D
8-5	295	<b>G→T</b>	aaggGggg	NT	G70W
30-40	298	<b>G→T</b>	gggGgct	NT	G70C
30-34	316	<b>G→T</b>	gctGacc	NT	E77Y
30-20	382	A→G	ataAaat	T	P99S
17-6	449	A→G	atgAtct	NT	D121G
30-30	480	<b>G→T</b>	cttGatt	NT	L131P
*30-13	481	A→C	ttgAttg	NT	I132L
30-12	506	<b>G→T</b>	ctgGtaa	NT	G119V
30-28	516	<b>G→T</b>	aatGcaa	NT	M143I
30-8	551	<b>G→T</b>	ttgGggc	T	P155H
*30-13	564	<b>G→T</b>	taaGggt	NT	K159N
30-24	568	<b>G→T</b>	gttGcaa	NT	A161S
30-32	625	<b>G→T</b>	gttGgat	NT	G180STOP
20-2	649	<b>G→T</b>	tttGttg	NT	V188F
*17-7	652	<b>G→T</b>	gttGttg	NT	V189F
30-22	655	<b>G→T</b>	gttGgat	NT	G190STOP
*18-2	666	A→G	gtcAagg	T	No change
21-8	686	G→T	tcaGgga	NT	R200M
18-9	687	<b>G→T</b>	cagGgat	NT	R200S
18-4	713	<b>G→T</b>	ttaGtga	NT	S209I
8-6	291	-1G	cttGgac	T	Frameshift
18-5	327-328	A2→A1	tgtAAtcc	T	Frameshift
30-3	420-424	G5→G4	aacGGGG Gaca	NT	Frameshift
18-6	721-722	G2→G1	actGGaaa	NT	Frameshift
21-2	727	-1G	aaaGcca	NT	Frameshift
*17-2	?				Complete deletion of exon 2
*18-2	?				Complete deletion of exons 2 and 3
17-4	?				No mutation found

NT, nontranscribed strand; T, transcribed strand; boldface, G→T transversion, the most frequent type of B[a]P-induced mutation. ?, for large deletions, the position where the large alteration had occurred was not determined exactly.

\*A mutant in which multiple mutations were found.

†The base position is numbered according to the GenBank entry J00423.

‡The strand containing purine at the altered site.

§Uppercase letters indicate the base or sequence altered by the mutation and lowercase letters indicate the surrounding sequence.