

Alignment of NHEJ events

NHEJ no MH		Deleted region				
Cd39	GGCAGCAGAATTGCG	tgaagccg	-----	aaaaaa	-AAAGAATTCTTTCTGCA	1549 deletion
Cd40	GGCGGTTACGAGGT	gaggagat	-----	agactc	-CGTCTCAAAAAAAAAA	1659 deletion
Cd41	AAAAGCAGGCTTGG	taccgaga	-----	caaaaa	-AAAAAAAAAAGAATTCT	1757 deletion
Cd55	CTGAAACCCTGTCTC	tactataa	-----	tcaaaa	-AAAAAAAAAAAAAAAAATTC	1626 deletion
Ni45	AAAGCAGGCTTGTA	ccgagaag	-----	ataggg	-ATAACAGGGTAATAATAT	1410 deletion
Ni48	GGAGACCCAAGCTGG	ctaggtaa	-----	ataggg	-ATAACAGGGTAATAATAT	1068 deletion
Ni50	CTGCAGATATCAACA	agtttcta	-----	ataacg	-GGGTAATAATATTTTAA	1443 deletion
Ni57	CTGAAAAAAAAATAAAA	aaaaaagg	-----	agggat	-CAGGGTAATAATATTTT	1108 deletion
Ni58	ACTATAGGGAGACCC	aagctggc	-----	aggtca	-GGAGATCGAGACAATCCT	1641 deletion
Ni68	AAAAGCAGGCT	tggtaccg	-----	ctaggg	-ATAACAGGGTAATATAG	1332 deletion
Ni70	GTGATCGCACCCTG	gaactcca	-----	taggga	-TAACAGGGTAATATAG	1068 deletion

NHEJ insertions		Deleted region					
Untemplated insertions highlighted in blue							
Cd42	GCCGCGGAGGCTCAGG	GTAA	cctgttat	-----	cagggtaa	-TAATATTTTTTAAACTTGCT	1384 deletion
Cd46	GCCTGAAGTCCCAGC	AAATAT	tactcagg	-----	tttttaac	-TTGCTCTTCAACTGTTGG	1253 deletion
Cd47	AGGCCGGCGTGGTGG	TAACAATAA	gtcaggcc	-----	cagtgagc	-CGAGATCGGCCACTG	1668 deletion
Cd51	CAGGCTTGGTACCGAG	GGTAACAGGTACC	aagcttaa	-----	cgtctcaa	-AAAAAAAAAAAAAAAAAGAATT	1745 deletion
Cd52	TACAAAAAAGCAGGCT	AATAT	tggtaccg	-----	aggataac	-AGGGTAATATAGGACCCCA	1336 deletion
Cd53	GGACAGAGCGTGACT	AGAGGTA	ccgtcaca	-----	gcataggg	-ATAACAGGGTAATAATATT	1123 deletion
Ni53	ATAGGGAGACCCAAGC	GGCACCCAAGCGGCACACTATATACGCTGGC	tggtaccg	-----	aaatagca	-TAGGGATAACAGGGTAATA	1503 deletion
Ni55	GCTTAAAGGCCGCGC	TGAT	cggaggct	-----	aaaaaaaa	-AAAAGAATTCTTTCTGCA	1739 deletion
Ni59	GCGGAGGCTCAGGCCT	TCTGCCTATTCTTA	ggtatccc	-----	tagcatag	-GGATAACAGGGTAATAATA	1371 deletion
Ni60	CGAGAAGCTTAAAGGC	TT	cggcgccg	-----	ctcttcaa	-CTGTTGGATCCACTTAAA	1431 deletion
Ni61	CTGCAGCCTGGGGGA	TTCTAT	cagagcgt	-----	cgctaggg	-ATAACAGGGTAATATAGGA	1051 deletion
Ni62	GCCGGGCGCGGTGGCT	TAA	caggcctg	-----	aaccgggg	-AGGCGGAGCTTGCACT	1646 deletion
Ni63	CTCGGATCCACTAGTC	ATCATAT	cagtgtgg	-----	gggagggc	-GAGCTTGCAGTGAGCCGAG	1739 deletion
Ni64	TACCGAGAAGCTTAAA	TCT	ggccggcc	-----	gcagggcg	-CCGCGACCCATGACCGAG	1773 deletion
Ni65	CGGAGGCTCAGGCCTGT	TTA	tatcccca	-----	atagggat	-AACAGGGTAATAATATTTT	1413 deletion
Ni66	ACAAAAAAGCAGGCTT	TTTGTAT	ggtaccga	-----	cgctaggg	-ATAACAGGGTAATATAGGA	1330 deletion
Ni71	TGGTACCGAGAAGCTT	TTCTGCGGGCGGTA	aaaggccg	-----	aagaattc	-TTTTCTGCAGGCGACCG	1761 deletion
As12	CCGGGCGCGGTGCTC	TA	aggcctgt	-----	atcgcgcc	-ACTGCACTCCAGCCTG	1677 deletion
As13	GATCCACTAGTCCAGT	AT	ggtggaat	-----	gctactcg	-GGAGGCTGAGGGCAGGAGA	1728 deletion
As15	CTATAGGGAGACCCAA	TAGTG	gctggcta	-----	atttcttt	-TCTGCAGGCGGCCGCGACA	1874 deletion

NHEJ MH

Microhomology highlighted in yellow

Deleted region

Cd43	TGTCTCACTATAAA	tacaaata-----tcaaaaaa	-AAAAAAAAAAAAAAAAATTCTT	1617 deletion
Cd44	CAGGCTTGGTACCGAG	aagcttaa-----cccgggag	-GCGGAGCTTGCACTGA	1674 deletion
Cd45	CTGAAACCCTGT	ctctact-----caaaaaat	-TAGCCGGGCGTGGTGGC	1476 deletion
Cd48	AATTCGGTGAGCCG	ggaggcgg-----gtgagccg	-AGATCGCGCCACTG	1478 deletion
Cd49	AAGTTGTACAAAAA	gcaggctt-----aaaaaaa	-AAAAGAATTCCTTTCTGC	1773 deletion
Cd50	ACAAAAA	aaaaggcc-----aaaaaaa	-AGAATTCTTTCTGCAGG	1455 deletion
Cd54	GGAGGCGGGCGGT	cgaggaca-----ccgtctca	-AAAAAAAAAAAAAAAAAAT	1672 deletion
Ni43	AAGTTGTACAAAAA	gcaggctt-----aaaaaaa	-AAAGAATTCCTTTCTGCA	1779 deletion
Ni44	CTGAGGCAGGAGAAAT	gcgagaag-----aaagaatt	-CTTTTCTGCAGGCGGCCG	1562 deletion
Ni46	GGCGCGGTGGCT	cctgtaat-----ataacagg	-GTAATAATATTTTTAAAC	1383 deletion
Ni47	TACCGAGAAGCTTAAA	ggccgggc-----ctcttcaa	-CTGTTGGATCCACTTAAA	1434 deletion
Ni49	GACTCACTATAGGGAG	acccaagc-----ctcgggag	-GCTGAGGCAGGAGAATTG	1753 deletion
Ni51	GTACCGAGAAGCTTAA	aggccggg-----cctgta	-GTCCAGCTACTCGGGA	1618 deletion
Ni52	TGTACAAAAAAGCAGG	cttggtac-----ggataacg	-GTAATAATATTTTTAAAC	1425 deletion
Ni54	TATAGGGAGACCCAAG	ctggctag-----ttgcagtg	-AGCCGAGATCGCGCCACT	1793 deletion
Ni56	ACAAAAAAGCAGGCTT	ggtaccga-----ctatttat	-AACAGGGTAATATAGGAC	1333 deletion
Ni69	GGTACCGAGAAGCTTA	aaggccgg-----ggataa	-CAGGGTAATA	1404 deletion
As11	ACCGAGAAGCTTAAAG	gccgggcc-----aaaattag	-CCGGCGTGGTGGTGCGG	1589 deletion
As14	TCAACAAGTTTGTACA	aaaaagca-----acccca	-TTGGTTTAAAAGCCAAT	1368 deletion

Supplemental Figure S9. Sequence alignments of the break site flanking sequences of the different type of events repaired through non-homologous end joining after metal treatments. The different types of NHEJ repair events were classified as having no microhomology (no MH), having insertions, having microhomology (MH) or other (not shown). The alignments show the flanking region of the break site with are different features highlighted: Insertions (blue) and MH (yellow). The deleted region is represented by the light blue sequences within the brackets. The size of the deletion is shown on the right in red.