

**Table S1 Primers used for plasmid construction, gap repair, verification PCRs and PCR assays**

<b>A. Primers used for plasmid construction</b>	
<b>primer name</b>	<b>sequence</b>
ScBaNhSpMIBsSb+	tagggataacagggtaatggatccgctagcatgcacgcgtacgcctgcagg
ScBaNhSpM1BsSb-	cctgcaggcgtacgcgtcatgctagcggatccattaccctgttatcccta
NheFRT48-plus	ctaggaagttcctatacttctagagaataggaacttcggaataggaacttc
NheFRT48-minus	ctaggaagttcctattccaagttcctattcttagaaagtataggaacttc
SphFRT48-plus	gaagttcctatacttctagagaataggaacttcggaataggaacttccatg
SphFRT48-minus	gaagttcctattccaagttcctattcttagaaagtataggaacttccatg
<b>B. Primers used for gap repair</b>	
<b>primer name</b>	<b>sequence</b>
bacL-f	GCGGAGTTTCGATAAAACAAG
bacL_NotI-r	ctcaagcggcgcCTACGATAACAACACCTGCC
bacL_AscI-f	gtcaagcggcgcGCGGAGTTTCGATAAAACAAG
bacR-r	CTCGGCTATCTCGACTATCTCG
bacR_NotI-f	gacaagcggcgcCTCGAGGTCGTTGTGGTTGTG
bacR_EcoRI-r	cagttgaattcCTCGGCTATCTCGACTATCTCG
<b>C. Primers used for verification of nbs-llp region integrity during cloning</b>	
<b>primer name</b>	<b>sequence</b>
bac074-f	gtatcgggatgcatcgaagt
bac074-r	agagaaaatggccggagaat
bac064-f	gctccaatcgtcctcatcat
bac064-r	caggtgtgttggggaatac
bac165-f	AGCCGGTTTGTTTTGTGTC
bac165-r	CTCGACGGTATCGTGGCTAT
bac267-f	TCTACGTCATGGAGCACGAG
bac267-r	ATTCATGGTTCCAGCGTCTC
bac320-f	TCTTGAACTGCAGCACATCC
bac320-r	CAACAACATGGGGCACTAGA
bac416-f	CTCCCGACTCAACACCGTAT
bac416-r	CCAGCTATGCCAAGTTCACA
bac502-f	AGCAATACCAGGGGACAGTG
bac502-r	AACGAAACGTAACCGACAGG
bac600-f	TCGTCGATCTCTGGGTCTTT
bac600-r	AGGCGTGAATAATGCGATTC
bac729-f	ACGAGAAGCACGTCCAGTTT
bac729-r	TCTGTTCAATGGGGCTAAGG
bac835-f	AGGATGGAGGCTTGAGGATT

bac835-r TTATCCCGGAATGCTTTGAG

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**D. Primers used for verification of gap repair junctions**

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<b>primer name</b>	<b>sequence</b>
baclj-f	GATTGGGTATCATCGTTGGG
acman_7520d	GGATCAAGAGCTACCAACTG??
acman_8363u	CGCTGACTTTGAGTGAATG
bacRend-f	CTCCTCGTTCTCCCTGCACATG
acman7929-f	gtgtaaacgacggccagt
acman8261-r	gttcaatgatccagtgag

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**E. Primers used for positioning attachment sites (attB) at a) nbs locus and b) llp locus**

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**a) attB at nbs**

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<b>primer name</b>	<b>sequence</b>
nbsGalk-f	ggctgatggtatgtaacctgtttaatgtcgtgcctaaacgtaattaaCCTGTTGACAATTAATCATCGGCA
nbsGalk-r	tatttcgcaagtttattgtagcaaaataaagtaactttacaagcgacggTCAGCACTGTCCTGCTCCTT
nbs2776-f	ccaggaactgaatcctct
nbs3169-r	cggccgcaagaactttaaga

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**b) attB at llp**

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bac810Galk_f	cacaatgaaatgatactaacgatacttaaaaacgtgttcaaaccttgtcaatattgtaaaaaacgttgacaattaatcatcgga
bac810Galk_r	caaatggtcatctgaccaaattcctaaatgaagagaatgttgttgctttttgaatcagcactgtcctgctcctt
bac810_att-end	cacaatgaaatgatactaacgatacttaaaaacgtgttcaaaccttgtcaatattgtaaaaaatcgataccgtcgacatgcc
bac810_att-head	caaatggtcatctgaccaaattcctaaatgaagagaatgttgttgctttttgaatcagcactgttaggtcagcgt

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**F. Primers used for a) removing I-SceI at IS1 and b) placing a new one at IS2**

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**a) removing I-SceI at IS1**

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<b>primer name</b>	<b>sequence</b>
up7993Galk-f	ccagtgagcgcgtaatacgaactcactatagggcgaattggagctcttt <b>cctgttgacaattaatcatcgga</b>
dn7993Galk-r	gaccgctcaggttctcgcagcgctacgctgcatgctagcggatcc <b>tcagcactgtcctgctcctt</b>
acman7929-f	gtgtaaacgacggccagt
acman8029-r	gccggcgcgccatcgataac

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**a) placing I-SceI at IS2**

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<b>primer name</b>	<b>sequence</b>
up8150Galk-f	GCGATAGAATGAGTGCAGGCCGAGATAGTCGAGATAGCCGAGATACAATAC <b>cctgttgacaattaatcatcgga</b>
dn8150Galk-r	ctacttccgcaaaaatgggttttattaacttacatacatactagaatc <b>tcagcactgtcctgctcctt</b>
up8150IS2-f	GCGATAGAATGAGTGCAGGCCGAGATAGTCGAGATAGCCGAGATACAATAC <b>ATTACCCTGTTATCCCTA</b>

dn8150IS2-r                    ctactttccgcaaaaatgggttttattaacttacatacactagaattc **TAGGGATAACAGGGTAAT**

up8150IS2plus-f                *CTAGATATCGCCCGATT*CAGATGCGGATATGGGAATGTGGCGATAGAATGAGTGGGAGG

dn8150IS2plus-r                ctactttccgcaaaaatggg

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**G. Primers used for attachment site PCR assay**

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<b>primer name</b>	<b>sequence</b>
nbs2858	caatcgcaagttgtccaagg
nbs3169	cggccgcaagaacttaaga
bac810L-f	cgataatcgaatgcactgaag
bac810R-r	ccagtcaactgcaatcgtag

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