Wellcome Sanger Institute
Wellcome Trust Genome Campus
Hinxton, Cambridge
CB10 1SA, UK

MGPgenotyping@sanger.ac.uk
www.sanger.ac.uk

Gene: AW112010

Colony prefix: DAGS

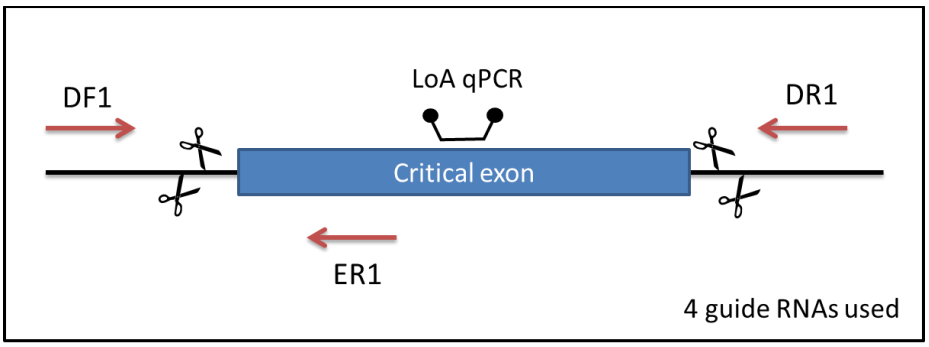
Allele: *AW112010*$^{em1(IMPC)Wtsi}$

Allele type: Crispr/Cas9 mediated deletion

Anticipated mutation: Less than 50% CDS deleted and no domain disruption

Allele information:

Further information about the allele can be found on the 'International Mouse Phenotyping Consortium' (IMPC) web site at http://www.mousephenotype.org



Mouse QC information

Loss of WT Allele (LOA) qPCR	na	**Mutation Sequence confirmed**	Pass
Mutant Specific SR-PCR	Pass	**Off-target analysis complete**	na

Mutant Allele sequence:

TATCTTCCTGGAAAAACAGACTTAGAAATAATAACAAACTAAATGCAAGCTTTCAAAGACAGAAGGTGACACTCAT
TCTCTCCAGTAAGCTGGGATGAGGCTTCCATGGGCCTTCTTACCCACTATAGATTTCCCCTTGCTGACACCCTGA
ACTCAGACTTCCTGCCTCCAGAACCAAGGGACAATAGGTTTAATGAGCTCTCCTGTTGGTGCCACCTTGTTATCG
TTGCTAAAAAGCC

Deletion size (bp): 239

Report Generated on: 12-AUG-2020

Wellcome Sanger Institute
Wellcome Trust Genome Campus
Hinxton, Cambridge
CB10 1SA, UK

MGPgenotyping@sanger.ac.uk
www.sanger.ac.uk

Guide RNAs used in initial experiment

Sequence	Chr	Chr Start	Chr End
AGCTGGGATGAGGCCTTCCATGG	19	11050316	11050338
CCCCTTACAGATCAAGAGGTACT	19	11050362	11050384
AATTAGCAGATGTGAATACAAGG	19	11050900	11050922
CCTCCTGAAGGATGGAGCCTTGC	19	11050990	11051012

Report Generated on: 12-AUG-2020

Wellcome Sanger Institute
Wellcome Trust Genome Campus
Hinxton, Cambridge
CB10 1SA, UK

MGPgenotyping@sanger.ac.uk
www.sanger.ac.uk

Genotyping by end-point PCR

These mice may be genotyped through a combination of separate PCR reactions that detect the gene-specific wild type allele and a mutant allele-specific short range PCR. Interpretation of the consolidated results produces the genotype of the mice. In addition to the expected product, the mutant assay may also amplify the endogenous wild type sequence which will appear as a larger band on an agarose gel. The presence of this extra band will depend on the size of the original deletion.

PCRs primer pairs and expected size bands

Assay Type	Assay	Forward Primer	Reverse Primer	Expected Size Band (bp)
Standard PCR	Wild type	AW112010_DF1	AW112010_ER1	340
Standard PCR	Mutant	AW112010_DF1	AW112010_DR1	297

Primer sequences

Primer Name	Primer Sequence (5' > 3')
AW112010_DF1	GAGATACCCACCCCACAAGA
AW112010_ER1	TCAGACTCGGGGTTTTTCAG
AW112010_DR1	CAGTGACTGCTTCCCTGTCA

Reaction setup

Reagent	µl
DNA (~50-100 ng)	1
10x Buffer	1.5
MgCl2 (50 mM)	0.45
Platinum Taq (Invitrogen)	0.15
dNTPs (100 mM)	0.15
Primer 1 (10 µM)	0.3
Primer 2 (10 µM)	0.3
ddH20	11.15
Total	15

Amplification conditions

Step	Conditions	Time
1	94°C	5 min
2	94°C	30 sec
3	58°C	30 sec
4	72°C	1:30 sec
5	Go to '2' + 34 cycles	-
6	72°C	5 min
7	12°C	forever

Report Generated on: 12-AUG-2020

Wellcome Sanger Institute
Wellcome Trust Genome Campus
Hinxton, Cambridge
CB10 1SA, UK

MGPgenotyping@sanger.ac.uk
www.sanger.ac.uk

Links to information and frequently asked questions

MGP mouse phenotype data:
http://www.mousephenotype.org

Useful publications

White, J.K., Gerdin, A.-K., Karp, N.A., Ryder, E., Buljan, M., Bussell, J.N., Salisbury, J., Clare, S., Ingham, N.J., Podrini, C., et al. (2013). Genome-wide Generation and Systematic Phenotyping of Knockout Mice Reveals New Roles for Many Genes. Cell 154, 452–464.

Mali P, Yang L, Esvelt KM, et al (2013) RNA-guided human genome engineering via Cas9. Science 339:823–6. doi: 10.1126/science.1232033

Jinek M, Chylinski K, Fonfara I, et al (2012) A programmable dual-RNA-guided DNA endonuclease in adaptive bacterial immunity. Science 337:816–21. doi: 10.1126/science.1225829

Cong L, Ran FA, Cox D, et al (2013) Multiplex genome engineering using CRISPR/Cas systems. Science 339:819–23. doi: 10.1126/science.1231143

Singh P, Schimenti JC, Bolcun-Filas E (2014) A Mouse Geneticist's Practical Guide to CRISPR Applications. Genetics genetics.114.169771–. doi: 10.1534/genetics.114.169771

Brandl C, Ortiz O, Röttig B, et al (2015) Creation of targeted genomic deletions using TALEN or CRISPR/Cas nuclease pairs in one-cell mouse embryos. FEBS Open Bio 5:26–35. doi: 10.1016/j.fob.2014.11.009

Zhou J, Wang J, Shen B, et al (2014) Dual sgRNAs facilitate CRISPR/Cas9 mediated mouse genome targeting. FEBS J. doi: 10.1111/febs.12735

Kraft K, Geuer S, Will AJ, et al (2015) Deletions, Inversions, Duplications: Engineering of Structural Variants using CRISPR/Cas in Mice. Cell Rep. doi: 10.1016/j.celrep.2015.01.016

Shen B, Zhang J, Wu H, et al (2013) Generation of gene-modified mice via Cas9/RNA-mediated gene targeting. Cell Res 23:720–3. doi: 10.1038/cr.2013.46

Wang H, Yang H, Shivalila CS, et al (2013) One-step generation of mice carrying mutations in multiple genes by CRISPR/Cas-mediated genome engineering. Cell 153:910–8. doi: 10.1016/j.cell.2013.04.025

Yang H, Wang H, Shivalila CS, et al (2013) One-Step Generation of Mice Carrying Reporter and Conditional Alleles by CRISPR/Cas-Mediated Genome Engineering. Cell 154:1370–1379. doi: 10.1016/j.cell.2013.08.022

Report Generated on: 12-AUG-2020