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Gene: Rbbp7

Colony prefix: MBRK

ESC clone ID: EPD0126_4_F03

Allele: Rbbp7^{tm1a(EUCOMM)Wtsi}

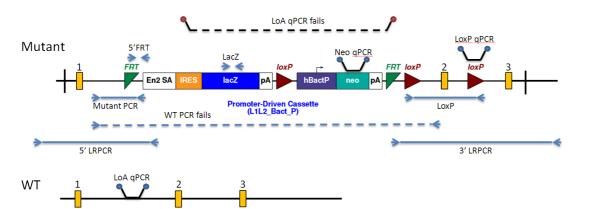
Allele type: Knockout First, Reporter-tagged insertion with conditional potential

Allele information:

Further information about the allele can be found on the 'International Mouse Phenotyping Consortium' (IMPC) web site at http://www.mousephenotype.org/martsearch_ikmc_project/martsearch/ikmc_project/38949 Details on how to determine the floxed exon can be found at http://www.i-dcc.org/kb/entry/21/

Mouse QC information

WT PCR



Promoter-Driven Cassette shown for illustrative purposes

| Southern Blot | na | TV Backbone Assay | pass | 5' LR-PCR | na |
|---------------------------------|------|--|------|------------------|------|
| Loss of WT Allele (LOA) qPCR | na | Homozygous Loss of WT Allele (LOA) SR-PCR | pass | Neo Count (qPCR) | pass |
| LacZ SR-PCR | pass | 5' Cassette Integrity | pass | Neo SR-PCR | na |
| Mutant Specific SR- PCR | pass | LoxP Confirmation | pass | 3' LR-PCR | na |
| Genotyping Comment | | | | | |

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Southern blot confirmation:

Southern blots are not routinely performed at the Sanger Institute due to throughput constraints. A southern blot experiment design tool can be found on the IMPC web site at http://www.mousephenotype.org/martsearch_ikmc_project/martsearch/ikmc_project/38949

Links to information and frequently asked questions about the EUCOMM/KOMP alleles and MGP projects

General targeting strategies: http://www.mousephenotype.org/martsearch_ikmc_project/about/targeting-strategies

MGP mouse phenotype data: http://www.sanger.ac.uk/mouseportal/

IKMC allele types: http://www.i-dcc.org/kb/entry/89/

MGP mouse quality control tests : http://www.i-dcc.org/kb/25/

Allele conversion guide - genotyping tm1b, tm1c and tm1d mice: http://www.i-dcc.org/kb/entry/105/

How the "critical" exon is decided: http://www.i-dcc.org/kb/entry/102/

Genotyping Information

Genotyping by end-point PCR

These mice may be genotyped through a combination of separate PCR reactions that detect the cassette, 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.

For example: cassette positive, mutant positive, wild type positive = heterozygous.

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PCRs primer pairs and expected size bands

| Assay Type | Assay | Forward Primer | Reverse Primer | Expected Size Band (bp) |
|--------------|----------|----------------|----------------|-------------------------|
| Standard PCR | Cassette | LacZ_2_small_F | LacZ_2_small_R | 108 |
| Standard PCR | Mutant | Rbbp7_41966_F | CAS_R1_Term | 132 |
| Standard PCR | Wildtype | Rbbp7_41966_F | Rbbp7_41966_R | 448 |

Primer sequences

| Primer Name | Primer Sequence (5' > 3') | |
|----------------|---------------------------|--|
| CAS_R1_Term | TCGTGGTATCGTTATGCGCC | |
| LacZ_2_small_F | ATCACGACGCGCTGTATC | |
| LacZ_2_small_R | ACATCGGGCAAATAATATCG | |
| Rbbp7_41966_F | CAGGTGAAGAGAATGAGACTGGAG | |
| Rbbp7_41966_R | ACCAACAAAACCCTGCTTCC | |

Reaction setup

| Reagent | μί |
|---------------------------|------|
| DNA (~50-100 ng) | 1 |
| 10x Buffer | 2 |
| MgCl2 (50 mM) | 0.6 |
| Platinum Taq (Invitrogen) | 0.2 |
| dNTPs (100 mM) | 0.2 |
| Primer 1 (10 M) | 0.4 |
| Primer 2 (10 M) | 0.4 |
| ddH20 | 15.2 |
| Total | 20 |

Amplification conditions

| Step | Conditions | Time |
|------|-----------------------|---------|
| 1 | 94°C | 5 min |
| 2 | 94°C | 30 sec |
| 3 | 58°C | 30 sec |
| 4 | 72°C | 45 sec |
| 5 | Go to '2' + 34 cycles | - |
| 6 | 72°C | 5 min |
| 7 | 12°C | forever |

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Relevant publications

Ryder, E., Doe, B., Gleeson, D., Houghton, R., Dalvi, P., Grau, E., Ramirez-Solis, R. (2013). Rapid conversion of EUCOMM/KOMP-CSD alleles in mouse embryos using a cell-permeable Cre recombinase. Transgenic research. 23(1), 177–185.

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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.

Ryder, E., Wong, K., Gleeson, D., Keane, T.M., Sethi, D., Vyas, S., Wardle-Jones, H., Bussell, J.N., Houghton, R., Salisbury, J., et al. (2013). Genomic analysis of a novel spontaneous albino C57BL/6N mouse strain. Genesis 51, 523–528.

Bradley, A., Anastassiadis, K., Ayadi, A., Battey, J.F., Bell, C., Birling, M.-C., Bottomley, J., Brown, S.D., Bürger, A., Bult, C.J., et al. (2012). The mammalian gene function resource: the international knockout mouse consortium. Mamm Genome 23, 580–586.

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Skarnes, W.C., Rosen, B., West, A.P., Koutsourakis, M., Bushell, W., Iyer, V., Mujica, A.O., Thomas, M., Harrow, J., Cox, T., et al. (2011). A conditional knockout resource for the genome-wide study of mouse gene function. Nature 474, 337–342.

Pettitt, S.J., Liang, Q., Rairdan, X.Y., Moran, J.L., Prosser, H.M., Beier, D.R., Lloyd, K.C., Bradley, A., and Skarnes, W.C. (2009). Agouti C57BL/6N embryonic stem cells for mouse genetic resources. Nat Methods 6, 493–495.

Liang, Q., Conte, N., Skarnes, W.C., and Bradley, A. (2008). Extensive genomic copy number variation in embryonic stem cells. Proc Natl Acad Sci U S A 105, 17453–17456.

Farley, F.W., Soriano, P., Steffen, L.S., and Dymecki, S.M. (2000). Widespread recombinase expression using FLPeR (flipper) mice. Genesis 28, 106–110.

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