

EMMA ID: 11038

Gene: *Trmt2a*

Common name: *Trmt2a-Ko / 13575A-E7*

Allele: *Trmt2a*^{tm1.1(KOMP)Vlcg}

Allele Information

Further information about the allele can be found on IMPC website at (copy the link to web browser)
<https://www.mousephenotype.org/data/alleles/MGI:96270/tm1.1%2528KOMP%2529Vlcg?>

Links to the general information

About IKMC resource

<https://www.infrafrontier.eu/knowledgebase/protocols/ikmc-products>

IKMC allele types

<http://www.i-dcc.org/kb/entry/89/>

Allele conversion guide - genotyping tm1b, tm1c and tm1d mice (assays infos available when required)

<http://www.mousephenotype.org/about-ikmc/targeting-strategies>

IMPC mouse phenotype data, search by the gene name

<http://www.mousephenotype.org/>

Genotyping Information

Genotyping by end-point PCR based on gel is composed of a gene-specific short range PCR using primers on wild type allele and a mutant allele-specific short range PCR. The combined results show the genotype of the mice. For example: mutant positive, wild type positive = Heterozygous.

PCR primer pairs and expected size bands

Assay	Forward Primer	Reverse Primer	Expected Size Band (bp)
Mutant	REG-Neo-F	Gene-specific Rev (R1)	565
Wildtype	Trmt2a for	Trmt2a rev	436

Primer sequences

Primer Name	Sequence 5' --> 3'
Trmt2a for	CAGGTGGAGGCAGGAGGGGCC
Trmt2a rev	GACCTTGGACTCTCTCCACCC
REG-Neo-F	GCAGCCTCTGTCCACATACACTTCA
Gene-specific Rev (R1)	TTCTCTGGGGCTAAATTCAAGCAAGC

PCR setup (Qiagen, Hot Start Plus)

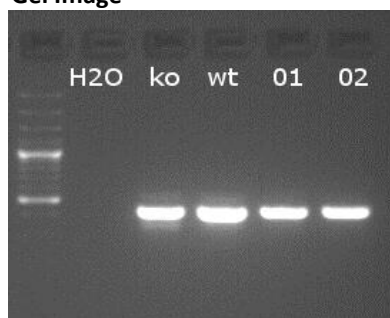
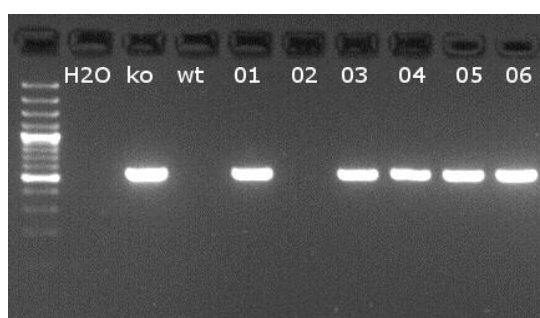
Component	Volume (μ l) 1x	Final conc.
DNA (~ 50-100 ng)	2	
Q-Solution (5x)	2,5	0,5
PCR-Buffer (10x)	2,5	1
DNTP mix (10 mM)	0,5	0,2
MgCl ₂ (25 mM)	1,5	1,5
Primer 1 (10 pmol/ μ l)	1	0,4
Primer 2 (10 pmol/ μ l)	1	0,4
Taq Polymerase (5 U/ μ l)	0,3	0,06
H ₂ O*	13,7	
Final volume	25	

* The amount of H₂O is adjusted with the number of primer.

Amplification conditions

PCR Settings	Temperature ($^{\circ}$ C)	Time	# of cycles
1 Denaturation (Melting)	95 $^{\circ}$ C	5 min	1
2 Amplification (Melting, Annealing, Polym.)	94 $^{\circ}$ C	30 sec	39
	65-55 (\downarrow 1 $^{\circ}$ C/Cycle)	45 sec	
	72 $^{\circ}$ C	45 sec	
3 Polymerisation	72 $^{\circ}$ C	10 min	1
4 Cooling	12 $^{\circ}$ C	hold	1

These PCR conditions have been optimized for our methods and preparation kits. Adaptions may be required.

Gel Image

WT-PCR

Mutant-PCR

Separated by gel electrophoresis on a 2% agarose gel.

ko/wt PCR separate; use Touch-Down cycling protocol: first 10 cycles anneal at 65 $^{\circ}$ C, decreasing 1 $^{\circ}$ C per cycle, next 30 cycles anneal at 55 $^{\circ}$ C

Genotyping using PCR-assays for cassette detection

LacZ reporter, Neo selection cassettes are inserted into the Knockout-first mutant allele. Cassette changes by allele conversion can be found on: <http://www.mousephenotype.org/about-ikmc/targeting-strategies>. For example, tm1b allele contains still lacZ reporter cassette, Neo selection cassette is deleted (promotor-driven only).

Please note that these assays are with universal cassette primers other than gene-specific. The confirmation on gene identity performed by e.g. sr genespecific PCR as provided is suggested .

PCR primer pairs and expected size bands

Assay	Forward Primer	Reverse Primer	Expected Size Band (bp)
lacZ	LacZ_multi_Deen_2F	LacZ_multi_Deen_2R	mut 81 bp,wt without band
Neo	Neo_long_Deen_F1	Neo_long_Deen_R1	mut 186 bp,wt without band

Primer sequences

Primer Name	Sequence 5' --> 3'
LacZ_multi_Deen_2F	TACTGGAGGCTGAAGTTCAGAT
LacZ_multi_Deen_2R	GCGTTTCACCCTGCCATAA
Neo_long_Deen_F1	TTGAACAAGATGGATTGCACGC
Neo_long_Deen_R1	CCTCGTCCTGCAGTTCATT

PCR setup (Qiagen, Hot Start Plus)

Component	Volume (µl)	Final conc.
DNA (~ 50-100 ng)	2	
Q-Solution (5x)	2,5	0,5
PCR-Buffer (10x)	2,5	1
DNTP mix (10 mM)	0,5	0,2
MgCl ₂ (25mM)	1,5	1,5
Primer 1 (10 pmol/µl)	1	0,4
Primer 2 (10 pmol/µl)	1	0,4
Taq Polymerase (5 U/µl)	0,3	0,06
H ₂ O	13,7	
Final volume	25	

Amplification conditions

PCR Settings	Temperature (°C)	Time	# of cycles
Denaturation (Melting)	95°C	5 min	1
Amplification (Melting, Annealing, Polym.)	94°C	30 sec	39
	58°C	45 sec	
	72°C	45 sec	
Polymerisation	72°C	10 min	1
Cooling	12°C	hold	1

These PCR conditions have been optimized for our methods and preparation kits. Adaptions may be required.