

GENOTYPING BY PCR PROTOCOL

MUTANT MOUSE RESOURCE & RESEARCH CENTER: UC DAVIS

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530-754-MMRRC

Protocol Name: C57BL/6N-Atm1Brd C1qatm1b(EUCOMM)Wtsi/JMmucd

MMRRC: 046839-UCD

Protocol:

Reagent/Constituent	Volume (μL)
Water	11.275
10x Buffer	2.5
MgCl ₂ (stock concentration is 25mM)	1.7
Betaine (stock concentration is 5M) <i>Optional</i>	6.5
dNTPs (stock concentration is 10mM)	0.5
DMSO <i>Optional</i>	0.325
Primer 1. (stock concentration is 20μM)	0.5
Primer 2. (stock concentration is 20μM)	0.5
Taq Polymerase 5Units/μL	0.2
DNA (example) extracted w/ "Qiagen DNeasy columns or other similar silica based kits"	1.0
TOTAL VOLUME OF REACTION:	25.000 μL

Comments on protocol:

- Protocol may work with other DNA extraction methods.
- Use Touch-Down cycling protocol-first 10 cycles anneal at 65°C decreasing in temperature by 1.0°C; next 30 cycles anneal at 55°C.
- Betaine and DMSO have been standardized due to high GC content. Protocol may be tested without. Also, may adjust MgCl₂ to increase reaction or decrease non-specific amplifications.

Strategy:

Steps	Temp (°C)	Time (m:ss)	# of Cycles
1. Initiation/Melting HOT START? ☐	94	5:00	1
2. Denaturation	94	0:15	
3. Annealing steps 2-3-4 cycle in sequence	65 to 55 (↓1°C/cycle)	0:30	40x
4. Elongation	72	0:40	
5. Amplification	72	5:00	1
6. Finish	15	∞	n/a

Primers:

Electrophoresis Protocol:

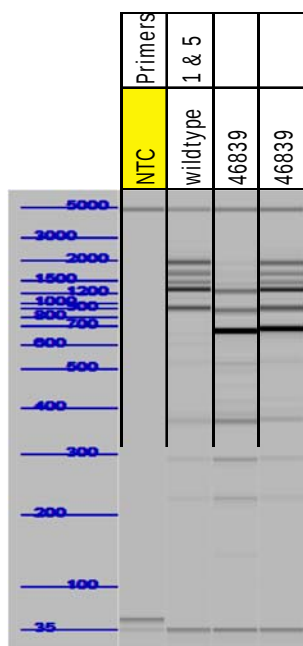
Name	Nucleotide Sequence (5' - 3')	Argarose: 1.5% V: 90		
1. 46839-lacF	GCTACCATTACCAGTTGGTCTGGTGTC	Estimated Running Time: 90 min.		
2. 46839-neoF	GGGATCTCATGCTGGAGTTCTTCG	Primer Combination	Band (bp)	Genotype
3. 46839-loxF	GAGATGGCGCAACGCAATTAATG	3 & 5	353	floxed
4. 46839-TTR	CTCTCTGGTTGCTCAGTTGAGTCC	2 & 4	567	PreCre
5. 46839-SR1	GCTGGTCTCGAACTCAGAAATTCACC	1 & 5	651	PostCre
6. 46839-F	ATGATCCTGAGGAGGACGAGAGG	6 & 4	404	Wildtype
		6 & 4	443	PostFlp
		6 & 5	576	PostFlp & PostCre

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Alternate R primer

Name	Nucleotide Sequence (5' - 3')	Argarose: 1.5% V: 90		
1. 46839-lacF	GCTACCATTACCAGTTGGTCTGGTGTC	Estimated Running:Time: 90 min.		
2. 46839-neoF	GGGATCTCATGCTGGAGTTCTTCG	Primer Combination	Band (bp)	Genotype
3. 46839-loxF	GAGATGGCGCAACGCAATTAATG	3 & 5	247	floxed
4. 46839-TTR	CTCTCTGGTTGCTCAGTTGAGTCC	2 & 4	567	PreCre
5. 46839-R	CTGCTCAGTGCCCAGAACAGC	1 & 5	545	PostCre
6. 46839-F	ATGATCCTGAGGAGGACGAGAGG	6 & 4	404	Wildtype
		6 & 4	443	PostFlp
		6 & 5	470	PostFlp & PostCre