GENOTYPING BY PCR PROTOCOL
MUTANT MOUSE RESOURCE & RESEARCH CENTER: UC DAVIS

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Protocol Name: C57BL/6N-Nxnem1(IMPC)J/Mmucd **MMRRC:** 048884-UCD

Protocol:

Reagent/Constituent	Volume (µL)
Water	5.6
GoTaq® G2 Colorless Master Mix,2X	7.5
Primer 1. (stock concentration is 20µM)	0.45
Primer 2. (stock concentration is 20µM)	0.45
DNA (example) extracted w/ "Qiagen DNeasy columns or other similar silica based kits"	1.0
	TOTAL VOLUME
	15

Comments on protocol:

- Protocol may work with other DNA extraction methods.
- Use Touch-Down cycling protocol-first 10 cycles anneal at 65ºC decreasing in temperature by 1.0ºC; next 30 cycles anneal at 55ºC.
- The mutant PCR is a general LacZ PCR. The wild type is specific for this strain.

Strategy:

Steps		Temp (ºC)	Time (m:ss)	# of Cycles
1. Initiation/Melting	HOT START? ☐	94	2:00	**1x**
2. Denaturation		94	0:10	
3. Annealing	steps 2-3-4 cycle in sequence	65 (↓1ºC/cycle)	0:30	**10x**
4. Elongation		68	2:00	
5. Denaturation		94	0:15	
6. Annealing	steps 5-6-7 cycle in sequence	55	0:30	**25x**
7. Elongation		68	2:00 (↑20sec/cycle)	

Primers:

Name	Nucleotide Sequence (5' - 3')
1. 48884-mutF	TACCGAGTCTCCAACATTCCTAATAT
2. 48884-wtF	ACAAATACCGAGTCTCCAACATTCCATC
3. 48884-comR	CCGGGTCATCTCGGATCACC

Electrophoresis Protocol:

Argarose: **1.5%** V: **90**

Estimated Running:Time: **90** min.

Primer Combination	**Band** (bp)	Genotype
1 & 3	92	mutant
2 & 3	102	wildtype

Deletion

AAATACCGAGTCTCCAACATTCC(atcgc)TAATATTCCTAGACGCCACCACAGGGAAGGTTG

Alternatively, use primers 2 and 3 and sequence with primer 3.

This protocol is untested.