

# GENOTYPING BY PCR PROTOCOL

## MUTANT MOUSE RESOURCE & RESEARCH CENTER: UC DAVIS

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530-754-MMRRC

Protocol Name: C57BL/6N-A<sup>tm1Brd</sup>/a Gdf11<sup>tm2a(EUCOMM)Hmgj</sup>/BcmMmucd MMRRC: 037721-UCD

### Protocol:

Reagent/Constituent	Volume (μL)
Water	11.275
10x Buffer	2.5
MgCl <sub>2</sub> (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
<b>TOTAL VOLUME OF REACTION:</b>	<b>25.000 μL</b>

### 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 MgCl<sub>2</sub> to increase reaction or decrease non-specific amplifications.

### Strategy:

Steps	Temp (°C)	Time (m:ss)	# of Cycles
1. Initiation/Melting <span style="float: right;">HOT START? <input type="checkbox"/></span>	94	5:00	1
2. Denaturation	94	0:15	
3. Annealing <span style="float: right;">steps 2-3-4 cycle in sequence</span>	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. 37721-lacF	GCTACCATTACCAGTTGGTCTGGTGTC	Estimated Running Time: 90 min.	
2. 37721-neoF	GGGATCTCATGCTGGAGTTCCTCG	Primer Combination	Band (bp)
3. 37721-loxF	GAGATGGCGCAACGCAATTAATG	3 & 5	290
4. 37721-TTR	ACAAAGGATCCCTCTGCTAAGATAGC	2 & 4	588
5. 37721-R	AGGGGAAAGAGATGTGACATGACC	1 & 5	588
6. 37721-F	GGAATCAGGAGCCTGGATCTGC	4 & 6	261
		4 & 6	466
		5 & 6	515
			Post-Flp & Post-Cre

