

# GENOTYPING BY PCR PROTOCOL

## MUTANT MOUSE RESOURCE & RESEARCH CENTER: UC DAVIS

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NAME OF PCR: STOCK Tg(Arpp21-cre)OL90Gsat/Mmucd MMRRC # 036142-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)                                                                                               | 6.5         |
| dNTPs (stock concentration is 10mM)                                                                                               | 0.5         |
| DMSO                                                                                                                              | 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 extracted with <input type="checkbox"/> NaOH <input checked="" type="checkbox"/> Proteinase K <input type="checkbox"/> Other: | 1.0         |
| <b>TOTAL VOLUME OF REACTION:</b>                                                                                                  | <b>25μL</b> |

### Comments on protocol:

- 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/DMSO is standardized due to high GC content in promoter regions and 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 HOT START? <input type="checkbox"/> | 94                    | 5:00        | 1           |
| 2. Denaturation                                           | 94                    | 0:15        | } 40x       |
| 3. Annealing } steps 2-3-4 will cycle in sequence         | 65 to 55 (↓1°C/cycle) | 0:30        |             |
| 4. Elongation                                             | 72                    | 0:40        |             |
| 5. Amplification                                          | 72                    | 5:00        | 1           |
| 6. Finish                                                 | 4                     | ∞           | n/a         |

### Primers:

| Name                | Nucleotide Sequence (5' - 3') |
|---------------------|-------------------------------|
| 1: Arpp21 (36142) F | ggTCTAAAAACTCTTTTAAATTTggAT   |
| 2: CreGS R1         | CGGCAACGGACAGAAGCATT          |

### Electrophoresis Protocol:

Agarose: 1.5% V: 90

Estimated Running Time: 90 min.

| Primer Combination | Band   | Genotype   |
|--------------------|--------|------------|
| 1 and 2            | 225 bp | transgenic |



#### Lanes

- 1 kb+ ladder (Invitrogen, Cat. #10787-026)
- Non-template control
- Wild-type & Cre
- & 5. Arpp21

1 2 3 4 5