

GENOTYPING BY PCR PROTOCOL

MUTANT MOUSE RESOURCE & RESEARCH CENTER: UC DAVIS

mmrrc@ucdavis.edu

STRAIN NAME: B6.Cg-Aff2^{tm1Dln} Fmr1^{tm1Dln}/Mmucd **MMRRC:** 041425-UCD

Protocol:

Reagent/Constituent	Volume (μL)
Water	10.775
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
Primer 3. (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

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

Name	Nucleotide Sequence (5' - 3')	Argarose: 1.5% V: 90		
1. 41425_fmr1-	GTGGTTAGCTAAAGTGAGGATGAT	Estimated Running Time: 90 min.		
2. 41425_fmr1-wtR	CAGGTTTGTGGGATTACAGATC	Primer Combination	Band (bp)	Genotype
3. 41425_fmr1-koR	GTGGGCTCTATGGCTTCTGAGG	1 & 3	527	Wild-type
4. 41425_aff2-koF	GGTGTCATTCTATTCTGGGG	2 & 3	501	Knockout
5. 41425_aff2-koR	GAAGCCAAAGCTAGAGGTGTC	4 & 5	194	Knockout
6. 41425_aff2-wtF	CAGCACTTTTAACCGGGTAG	6 & 7	170	Wild-type
7. 41425_aff2-wtR	CCAAGTCCCAATCCCTGAAAAAG			

