

GENOTYPING BY PCR PROTOCOL

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Protocol Name: B6;129-Rev3^{tm2.1Rwd} Polh^{tm1Pjg}/Mmucd(Pol Zeta and Pol eta) **MMRRC:** 042063-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 MgCl₂ to increase reaction or decrease non-specific amplifications.

Strategy:

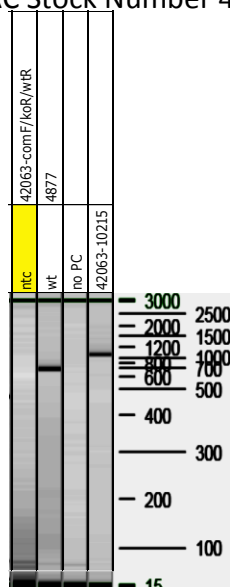
Steps	Temp (°C)	Time (m:ss)	# of Cycles
1. Initiation/Melting HOT START? ☐	94	5:00	1
2. Denaturation	94	0:15	
3. Annealing steps 2-3-4 cycle in sequence	65 to 55 (↓1°C/cycle)	0:30	40x
4. Elongation	72	0:40	
5. Amplification	72	5:00	1
6. Finish	15	∞	n/a

Primers: Pol eta

Electrophoresis Protocol:

Name	Nucleotide Sequence (5' - 3')	Agarose: 1.5%	V: 90
1. 42063-comF	AGAGGCCAGTTGAATGAACG	Estimated Running Time: 90 min.	
2. 42063-wtR	GGCAGGGCACACTATTTAGGAC	Primer Combination	Band (bp)
3. 42063-koR	GTCTGTTGTGCCAGTCATAGC	1 & 2	700
		1 & 3	1200
			Genotype
			wildtype
			KO

Note: For Zeta genotype, just follow MMRRC Stock Number 42062, Pol Zeta protocol



PCR protocol developed by MMRRC at University of California, Davis