

GENOTYPING BY PCR PROTOCOL

MUTANT MOUSE REGIONAL RESOURCE CENTER: UC DAVIS

mmrrc@ucdavis.edu

530-754-MMRRC

NAME OF PCR: B6;129P2-Smad7^{Gt(YHC053)Byg}/Mmucd MMRRC # 030797-UCD

Protocol: (β-Geo Tcrd Duplex)

Reagent/Constituent	Volume (μL)
Water	10.275
10x Buffer (contains 15mM MgCl ₂)	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) β-Geo F	0.5
Primer 2 (stock concentration is 20μM) β-Geo R	0.5
Primer 3 (stock concentration is 20μM) Tcrd F	0.5
Primer 4 (stock concentration is 20μM) Tcrd R	0.5
Taq Polymerase 5Units/μL	0.2
DNA (50-200ng/ μL) extracted w/ "Qiagen DNeasy columns or other similar silica based kits"	1.0
TOTAL VOLUME OF REACTION:	25.000 μL

Comments on protocol:

- Use this generic protocol for BayGenomics ES Cell lines and other gene trap constructs. Primers amplify fragment between neomycin and β-galactosidase fusion vector element.
- The TCRD rxn is an internal control for testing for the presence of DNA.
- 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.
- Additional [BayGenomics Protocols](#) can be found at the International Gene Trap Consortium (IGTC) website.

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

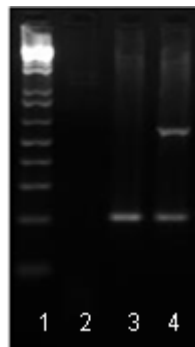
Primers:

Name	Nucleotide Sequence (5' - 3')
1. β-Geo F	CAA ATG GCG ATT ACC GTT GA
2. β-Geo R	TGC CCA GTC ATA GCC GAA TA
3. Tcrd F	CAA ATG TTG CTT GTC TGG TG
4. Tcrd R	GTC AGT CGA GTG CAC AGT TT

Electrophoresis Protocol:

Agarose: 1.5% V: 90
 Estimated Running 90 min.

Primers	Band	Genotype
1 and 2	581 bp	β-Geo +
3 and 4	200 bp	DNA Reference rxn



Lanes:
 1. 1Kb+ ladder
 2. H₂O control
 3. DNA reference rxn
 4. B-Geo control