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Protocol: DNA Extraction from Mouse Biopsies

Application:

Extraction of DNA for the purposes of genotyping mice. Biopsies generally consist of tail or ear tissue.

Procedure:

1. Obtain biopsy in 1.5-mL screw cap microfuge tube.

2. Add 400 μL of 50 mM NaOH.
   Note: *50 mM NaOH is diluted from 10 N NaOH. In regards to NaOH, 10 N = 10 M.*

3. Boil (100 °C) until tissue is fully dissolved (~30-60 minutes).
   Note: *Intermittent vortexing can speed up dissolution of tissue.*

4. Add 50 μL of 1 M Tris-hydrochloric acid (Tris-HCl), pH 8.0.

5. Vortex and centrifuge at 25 °C, 12,000 x gravity (g) for 2 min.
   Note: *Unless otherwise noted, all centrifugation steps performed using a benchtop micro centrifuge.*

6. Transfer 200 μL of supernatant to new 1.5-mL microfuge tube.

7. Add 20 μL of 3 M sodium acetate (NaOAc), pH 5.2.
   Note: *Volume of NaOAC added is equivalent to 1/10th the sample volume.*

8. Add 660 μL of 95% ethanol (EtOH).
   Note: *Volume of EtOH added is equivalent to 3x the volume of sample + NaOAC.*

9. Vortex and precipitate (PPT) DNA at -20 °C overnight.
   Note: *DNA can also be PPT at -80 °C for 1 hour in a pre-chilled tube rack.*

10. Centrifuge at 4 °C, 12,000 x gravity (g) for 5 min.

11. Aspirate supernatant and resuspend (RSS) DNA pellet in 100 μL of 0.1x Tris-EDTA (TE) buffer.
    Note: *0.1x TE is diluted down from a 10x TE stock solution.*