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.
   \textit{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).
   \textit{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.
   \textit{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.
   \textit{Note:} Volume of NaOAc added is equivalent to 1/10\textsuperscript{th} the sample volume.

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

9. Vortex and precipitate (PPT) DNA at -20 °C overnight.
   \textit{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.
    \textit{Note:} 0.1x TE is diluted down from a 10x TE stock solution.