

EduPrimer™ DNA Profiling Kit

Brief Protocol

EduPrimer™ DNA Profiling Kit is specifically designed for exposing novice students to PCR principles and technique. The kit is simple to use. The whole lab can be done within 3 hours.

DNA Preparation ~ 12 min

- 1. Add 200μL of **Solution A** to a 1.5mL microcentrifuge tube.
- 2. Collect cheek cells with provided swab and put it into the **Solution A**.
- 3. Heat sample in pre-heated 95°C heat block for 10 minutes
- 4. Add 20μ l **Solution B** to the sample tube. Vortex or invert to mix for at least 10 seconds.
- 5. Spin sample for 1 minute at 12,000rpm
- 6. Use 2µl of supernatant (avoid the pellet) to the labeled PCR tube for a total of 20 µl as indicated in the table below_as DNA template for PCR.

PCR Reaction Mixture ~ 5 min

 $10\mu l$ Mix the following reagents into a standard PCR tube: 2X PCR Master Mix

> H₂O (provided) 8µl Genomic DNA Template 2μ

> > Volume total = 20μ l

PCR Parameters ~ 78 min

- 1. $94^{\circ}C 2$ minutes
- 2. 94°C denaturing 20 seconds}
- 3. 58°C annealing 20 seconds} repeat steps 2, 3, & 4 for 40 cycles
- 4. 72ºC extension 20 seconds}
- 5. $72^{\circ}C 5$ minutes
- 6. 4°C finished / hold

Agarose Gel Electrophoresis ~30 min

- Pour 1% agarose gel, using your preferred staining method.
- Use at least 10 µL of PCR product in each well to visualize on gel.
- Run at ~100V for 10-20 minutes and stop before loading dye has run off gel
- Visualize and record the results manually or by photography

Larger expected band ≈ 400 bp (Alu element inserted)

Smaller expected band ≈ **100bp** (no Alu insert)

Additional Required Materials

Thermal cycler, Heat block, Microcentrifuge, Micropipettes, Pipette tips, PCR tubes, Gel electrophoresis apparatus

(Full protocol for students also available on our website)



