GenoSensor

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 95ºC heat block for 10 minutes
4. Add 20µl **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

Mix the following reagents into a standard PCR tube:

2X PCR Master Mix	10µl
H_2O (provided)	8µl
Genomic DNA Template	2µ
Volume total =	20µl

PCR Parameters ~ 78 min

1. 94ºC – 2 minutes
2. 94ºC denaturing – 20 seconds}
3. 58ºC annealing – 20 seconds} **repeat steps 2, 3, & 4 for 40 cycles**
4. 72ºC extension – 20 seconds}
5. 72ºC – 5 minutes
6. 4ºC – 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 ≈ **400bp** (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)