***Protocol #1***

**ZYMO QUICK-DNA EXTRACTION**

**A. Lysis Step**

1. Add 400 µl of **Genomic Lysis Buffer** to 100 µl of blood or plasma (4:1). Mix completely by vortexing 4-6 seconds, then let stand 5-10 minutes at room temperature.  
Note: Add 200 µl Genomic Lysis Buffer to all samples <50 µl. For samples larger than 50 µl, add a proportional amount (4:1) of Genomic Lysis Buffer (e.g., Add 800 µl Genomic Lysis Buffer to 200 µl blood).

**B. Precipitation**

2. Transfer the mixture to a **Zymo-Spin™ IICR Column** in a Collection Tube. Avoid wetting the rim of the spin column. Centrifuge at 10,000 x g for one minute. Discard the Collection Tube with the flow through.

3. Transfer the **Zymo-Spin™ IICR Column** to a new Collection Tube.

**C. Wash**

4. Add 200 µl of DNA Pre-Wash Buffer to the spin column. Centrifuge at 10,000 x g for one minute.  
5. Add 500 µl of **g-DNA Wash Buffer** to the spin column. Centrifuge at 10,000 x g for one minute.

**D. Elution**

6. Transfer the spin column to a clean microcentrifuge tube. Add ≥50 µl DNA Elution Buffer or water to the spin column. Incubate 2-5 minutes at room temperature and then centrifuge at top speed for 30 seconds to elute the DNA.  
7. The eluted DNA can be used immediately for molecular based applications or stored -20ºC - -80 ºC for future use.

***Protocol #3***

**Agarose Gel-Electrophoresis**

1. Agarose gels are prepared using a w/v percentage solution.
2. Prepare 2% agarose gel by weighing out 1 gram of agarose powder using a measuring scale. Transfer the agarose powder into a conical flask. Swirl to mix.
3. Measure 50ml 1x TBE (Tris-borate-EDTA) into the conical flask.
4. Mix well and dissolve using a microwave/heat plate for 2-3 minutes.
5. Allow the gel to cool until it no longer hot to touch, but avoid it solidifying while cooling.
6. Add 10ul of Ethidium bromide (DNA staining dye) to the gel in the flask, and mix.
7. Place an appropriate comb into the gel casting mould.
8. Pour gel into the gel casting mould, and allow to cooling. Remove comb from the tank.
9. Add enough running TBE buffer to cover the surface of the gel.
10. Prepare DNA samples by adding 1ul of loading dye to 5ul of the DNA sample. Carefully load mixture into gel well (one sample per well). Load 5ul DNA ladder into the gel well.
11. Cover tank and run gel at 100v for 1 hour. Turn off power and carefully remove the gel from the gel box.
12. Place gel in the UV transilluminator to visualise.