**Inclusive List of Instrumentation and Reagents/Materials**

Instrumentation

Laboratory 1

 Vortex

Microfuge (two if possible)

 Heating bath or block (56°C)

Micropipets and tips - p1000, p200 or p100, and p20

 Spectrophotometer or Nanodrop if available

Laboratory 2

 Microcentrifuge

 Thermocycler

 Micropipets and tips - p200 or p100, p20 (p10 or p2 if available)

Laboratory 3

 Micropipets and tips - p20 (p10 or p2 if available)

 UV transilluminator and camera

 Agarose gel electrophoresis equipment (E-Gel apparatus 1 or 2)

 Power Supply for E-gel electrophoresis

 Water bath or Thermocycler (37°C) and appropriate tubes

Optional - Computers with Internet connection for students to examine their DNA sequences after demonstration.

Reagents/Materials

 All laboratories

 Gloves

 Lab Coats

 Microfuge tubes (1.5 ml)

 Tube racks

 Waste receptacle (dry and wet)

Laboratory 1

 Colored water for pipetting practice

 Sterile Swabs

 1.5 ml microfuge tubes (some are provided in the kit below)

 2.0 ml collection tubes (some are provided in the kit below)

 1 X PBS (phosphate-buffered saline)

 Ethanol 96-100%

 Genomic DNA extraction kit (Recommended - QIAamp DNA mini kit - Qiagen #51304)

 QIAamp DNA mini kit contains:

 Buffer AL (extra AL is needed to use all 50 column in the kit - Qaigen # 19075)

 Proteinase K

 QIAamp spin columns

 Buffer AW1

 Buffer AW2

 Buffer AE

 (Tubes are provided in the kit as well)

Laboratory 2

 50% Glycerol solution for pipetting practice 1ul (enzymes)

EX –TAQ nucleotides and buffers (Takara # RR001A)

Primers (Eurofin Genomics or another oligonucleotide manufacturer)

 Forward5’CCTTCGTTTTCTTGGTGAATTTTTGGGATGTAGTG

 AAGAGGCGG-3

 Reverse 5’-CTACTAACGTTTGGTTCGGTTGGA-3’

PCR tubes (0.5 or 0.2 mL depends on the size of the wells in your thermocycler)

Laboratory 3

 2.0% E-Gels (Life Technologies)

 Gel system with 6 2% gels (EtBr) # G6000-02

 Gel system with 6 - 2% gels (SYBR safe) # G6206-02

 18 - 2% gels (EtBr) # G501802

 18 - 2% gels (SYBR safe) # G521802

 Restriction Enzyme HaeIII (New England Biolabs # R0108S)

 Gel loading dye (New England Biolabs # B7021S)

 50bp DNA ladder (New England Biolabs # N0473S)

 PTC strips (Fisher Scientific #S85287A)

 Control strips (Fisher Scientific #S85286A)