Gel electrophoresis

Time : 3h

I. Principle

This technique is used to separate DNA fragments in function of their molecular weight using an electric field. Small fragments will migrate further than big fragments, they will be found at the bottom of the gel, whereas big fragments will stay towards the top of the gel.

II. Material

- 800 mL TAE 1X
- 8 g agarose
- 500 mL erlen
- 3 µL Midori Green
- 6 µL NEB 2-log DNA ladder
- 6 µL NEB purple loading dye
- 1 L glass bottle
- Electrophoresis cell
- Combs

III. Method

Caution: this protocol includes manipulation of hot glassware, use protective gloves.

a. Stock preparation

- Weight 4 g of agarose
- Add 400 mL of TAE 1X
- Microwave the erlen until all grains of agarose solubilized
- Transfer the content of the erlen into a 1L glass bottle
- Repeat in order to have 800 mL of 1% agarose gel
- Stock the labeled bottle at 55°C

b. Gel preparation

- Pour 30 mL of 1% agarose gel from the stock into a 25 mL erlen

Gel electrophoresis

Time : 3h

- Add 3 µL of Midori Green
- Homogenize the mixture by gently making circles with the bottom of the erlen
- Pour the gel into the closed cell with combs
- Let the gel polymerize for 10-15 min
- Load the gel with 6 µL of DNA ladder
- Add 6 µL of loading dye to the samples if necessary