**Presentation 8**

**Model DNA Restriction**

**Materials:**

* Two DNA molecules with the same size of two meters
  + First molecule has one restriction site for *Eco*RI (GAATTC)
  + Second molecule has two restriction sites for *Eco*RI
* A sissor (model standing for restriction enzyme *Eco*RI)

**Performance:**

1. Step:

Two mentors carry a DNA molecule each. They demonstrate that both molecules have the same length by overlapping both molecules.

1. Step:  
   Executing mentor goes with the sissor along the first DNA molecule looking for a restriction site, the palindromic sequence GAATTC for *Eco*RI.

First molecule has one restriction site and the sissor cuts the molecule into two DNA fragments. Both fragments have sticky ends.

3’-GAATTC-5’ G AATTC

5’-CTTAAG-3’ ATTAA G

1. Step:  
   Executing mentor goes with the sissor along the second DNA molecule looking for restriction sites of *Eco*RI, which is the palindromic sequence GAATTC.

Second DNA molecule has two restriction sites and the sissor cuts the moelcule twice into three DNA fragments.

1. Step: Summary  
   Both DNA molecules have the same size but a different base sequence.

First molecule is restricted one time 🡪 two fragments in the mixture

Second molecule is restricted twice 🡪 three fragments in the mixture

Fragments in both mixtures can be seperated by Gel-Electrophoresis (Presentation 9)