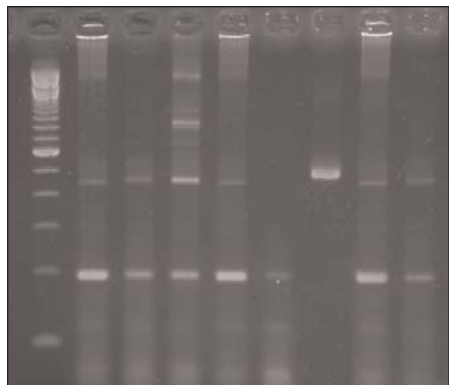


MolecuLab 310 & 320

Genetically Modified Foods, PCR



Designed for six teams of students, the entire MolecuLab 310 or 320 can be completed in four 45-50 minute class periods. Additional time should be allowed to review discussion questions.



In this exercise your students will use polymerase chain reaction (PCR) to test familiar, corn-based foods for genetic modification. Each team will amplify a 195 base-pair DNA sequence from the *Cauliflower Mosaic Virus (CaMV)* 35S promoter, a common marker of genetic modification in plants.

Students will have the opportunity to isolate DNA from a food sample they provide. Each team will then perform PCR reactions using the DNAs they purified and control DNA samples provided with the kit. Following separation by gel electrophoresis the PCR products will be analyzed to determine which foods may be genetically modified.

This lab is followed by a series of discussion questions to guide students in identification of genetically altered samples and enhance their understanding of genetically modified organisms (GMO).

Instructors may choose either agarose gels for horizontal electrophoresis or pre-cast polyacrylamide gels for vertical electrophoresis.

Pre-amplified versions of the kit are also available for classrooms without access to a thermocycler (MolecuLabs 301 & 302).

Ordering Information:

MolecuLab™ 310 (Agarose Gels)

E1-3010\$195

Replacement Biologicals, 310

E1-3210 (shaded in blue below)\$150

MolecuLab™ 320 (Polyacrylamide Gels)

E1-3020\$225

Replacement Biologicals, 320

E1-3220 (shaded in blue below)\$150

MolecuLab™ 310 or 320 Includes:

- Nuclease-Free Distilled Water
- DNA Extraction Buffer
- Ready-To-Go™ PCR Beads
- Template DNA from certified GM corn
- Student protocols and Instructor's Manual on CD
- High Resolution Agarose Powder **OR** Pre-Cast Polyacrylamide Gels
- TBE Buffer Powder
- Methylene Blue Stain (320 only)
- Ethidium Bromide Stain (310 only)
- Template DNA from corn meal and corn chips
- 100 bp DNA Size Ladder
- Primers complementary to CaMV 35S promoter DNA
- Ethidium Bromide Disposal Kit (310 only)
- 6X Gel Loading Dye
- 12 Staining Trays
- 1.5 mL Microtubes
- Pestles for grinding food samples
- Gloves

Ready-To-Go™ is a registered mark of Amersham Pharmacia Biotechnology.