

HDA-GT12 System for Genotyping of Human Papillomaviruses (HPV) DNA

Introduction:

Human Papillomaviruses (HPVs) are important pathogens in humans. HPV infection is associated with neoplastic transformation, especially cervix cancer. To date, more than 100 different genotypes have been characterized. Early detection to differentiate between oncogenic and non-oncogenic genotypes can be accomplished by specific amplification of PCR DNA from individuals.

BioCal provides a cost-effective multi-channel capillary electrophoresis system for HPVs genotyping analysis. This bench-top HDA-GT12 system uses a fluorescence mechanism for nucleic acid detection. A multi-channel capillary gel cartridge used with the system can automatically inject and analyze 12 strip samples simultaneously in less than 10 minutes or a 96-well plate for 1.3 hour. This affordable system can be operated automatically for identifying the oncogenicity of HPV stains.

Methods:

BIOPAP STD DETECTION kits from BIOTOOLS B&M labs, SA (Madrid, Spain) were used in this study. Positive control DNA from the kit was used for PCR* amplification and was analyzed in the HDA-GT12 system.

Operation Procedure:

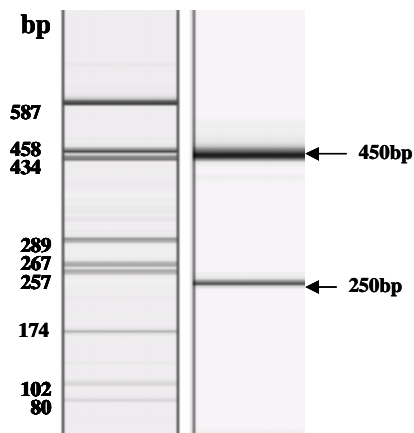
1. Insert BioCal's gel cartridge into the system (cartridge capacity: 1200 samples) (45 seconds).
2. Place amplified DNA solution (20 μ l) directly in 0.2 ml

3. tube strips (or plates) into the sample tray (30 seconds).
3. Select a method from BioCalculator software and click "run" button to run samples (45 seconds).
4. Separate and detect the DNA fragments (500s seconds at 5kV).

*The PCR process is covered by patents owned by Hoffmann-LaRoche.

Results:

1. Control 450 bp and oncogenic 250bp bands were detected.
2. A DNA size marker was used to determine the size of PCR products.



Total analysis time: 10 minutes



HDA-GT12 System Features:

- Automated process: no need for manual sample loading.
- Replaceable gel cartridge: no need for gel preparation.
- 10-minute electrophoresis time.
- Detection : 0.1 ng/ ul DNA concentration in the solution.
- Resolution: 1-5 bp in DNA fragment sizes between 50-500 bp.
- 96-sample capacity.
- Data view: in electropherogram or gel-view format.
- Software: digital data for analyses.
- Compact design: fits on any lab bench.
- Competitive system cost and economical consumables.
- HDA-GT12 system is for research use only.