MUTATION DETECTION

Fragment Analyzer™ Automated CE System

Speed up reverse genetics lab work

by accelerating sample prep and analyzing larger fragments.

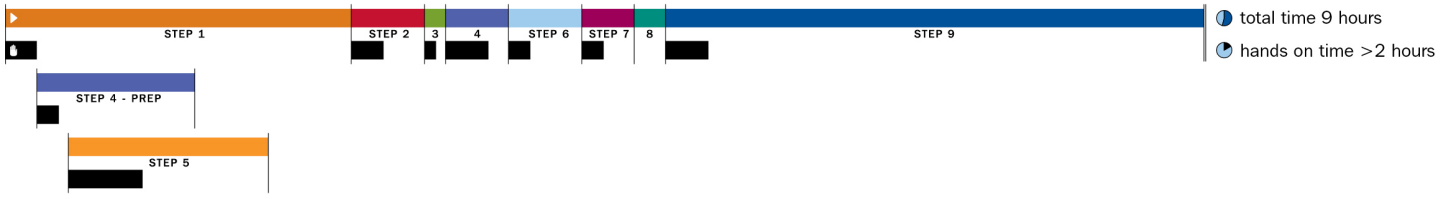
Accurately detecting natural or induced-point mutations with slab gels is a long, drawn-out, time-consuming process. Now there's something better and faster. Mutation detection times are cut in half because of the Fragment Analyzer's speed and streamlined methods used with it.

Mutation Detection Process Comparison – Fragment Analyzer™ Process vs Conventional Process

FRAGMENT ANALYZER™ AUTOMATED CE SYSTEM PROCESS

Step 1: PCR and heteroduplex formation
Step 2: Heteroduplex transfer
Step 3: Heteroduplex digestion
Step 4: Diluent addition
Step 5: Electrophoresis

TRADITIONAL PROCESS



Step 1: PCR and heteroduplex formation
Step 2: Heteroduplex digestion
Step 3: EDTA addition
Step 4: Sephadex preparation and DNA capture
Step 5: Acrylamide gel and apparatus preparation
Step 6: Acrylamide gel prerun
Step 7: Sample denaturation
Step 8: Sample loading
Step 9: Electrophoresis

ADVANCED ANALYTICAL

Compare post-PCR Process Steps for the Fragment Analyzer™ to the Slower Methods Used in Manual Acrylamide Gels.

Mutation Detection Kit Process

1. Add 2µL PCR product to 2µL enzyme solution
2. Spin 10 sec
3. Incubate @45°C for 45 minutes
4. Add 20 µL diluent buffer and place on ice
5. Run CE

Current Conventional Process

1. Add 20µL Cel I cocktail to PCR products
2. Spin 1 min
3. Incubate @45°C for 15 minutes
4. Add 5µL of EDTA
5. Purify on Sephadex or EtOH precipitate
6. Run electrophoresis

Features and Benefits

No clean up step needed:
Eliminates several steps of the traditional process, reduces overall time and potential sample loss.

Potential to reduce gDNA input amount:
Smaller PCR setup and high sensitivity means less input gDNA is required — saves precious DNA.

Fast electrophoresis run times (40 minutes):
Get more separations done per instrument per day.

Minimal labor (no pouring gels or cleaning plates):
Automated process significantly reduces time handling fragile glass plates and toxic chemicals

Analyze up to 16 gene copies:
Maximize throughput with optimal organism pooling.

Examine fragments up to 10,000 base pairs:
Exceeds size limitations of traditional slab gel methods. Current slab gel methods can only analyze 1,500 base pairs.

Eliminate use of labeled primer sets:
Saves time and cost for expensive labels. No signal loss over time.

Ability to identify multiple cuts in one gene:
Sensitive intercalating dye allows easy detection of multiple fragment cut sites.

Analytical software for fragment sizing and concentration:
Easy to use data analysis software eliminates manual screening of gel pictures. Aids in displaying and sizing cut fragments

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