

TRANSGENOMIC

WAVE® HS Systems for Mutation Detection

WAVE HS Systems are the systems of choice for detecting somatic mutations. Based on proven WAVE System technology, the WAVE HS Systems incorporate HSD-High Sensitivity Detection. HSD significantly increases signal sensitivity, typically by orders of magnitude when compared with UV detection.

Three models of the WAVE HS 3500 System are available to meet your throughput requirements; refer to the *WAVE Systems for Mutation Detection* product sheet for specific system configurations and throughput.



Figures 1 and 2 highlight the performance enhancements provided by HSD — High Sensitivity Detection. Figure 1 illustrates the ability to detect very low-level mutations with a high degree of confidence and Figure 2 illustrates the sensitivity of HSD.

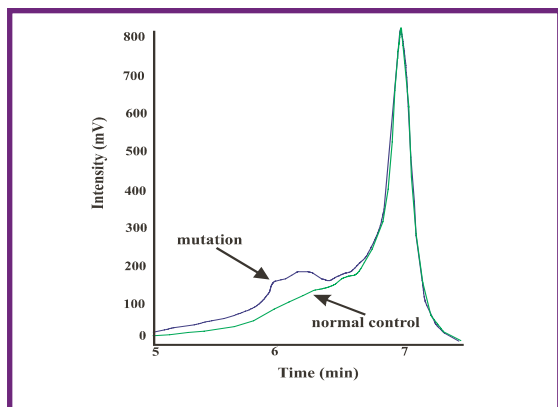


Figure 1. A somatic mutation in Exon 7 of *p53* and the corresponding wild type trace.

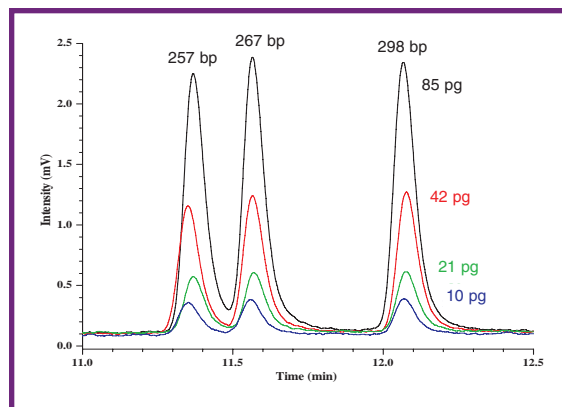


Figure 2. Serial dilutions of a sizing standard indicating the concentration of a 298 bp fragment from 85 pg to 10 pg.

Applications

The WAVE HS System can be used for applications that require extra sensitivity, including the following:

- Detection of somatic mutations — Enhances the detection of mutant alleles at low concentrations in the presence of highly abundant wild type alleles, in excess of 1:100 ratio.
- Pooling of DNA samples — Detects mutations in plant samples (barley) at a 1:48 ratio of mutant to wild type plants.
- Analysis of samples originating from PCR with low template concentration — PCR samples containing DNA template with concentrations as low as 0.5 ng can be successfully analyzed.

Standard Components

Navigator™ Software

Navigator Software offers:

- Internet connectivity for retrieval of genetic sequences (www.mutationdiscovery.com)
- Automated prediction of melt temperatures
- Complete system operating parameters
- Data analysis and automated mutation calling
- Network capabilities

NucleicSep Cartridge

Patented column filled with non-porous matrix consisting of polystyrene-divinylbenzene (PS-DVB) copolymer microspheres

- DNASep® Cartridge (standard on 3500 and 3500A)
Injection capacity: 0.5 ng to 2 µg
- DNASep HT Cartridge (standard on 3500HT)
Injection capacity: 0.5 ng to 4 µg

Computer System

Intel® Pentium® 4 Processor 1.80 Ghz (Equivalent or better)
512 MB PC2100 (266 Mhz) DDR
40 GB Ultra ATA 100 (7200rpm)
Integrated Intel® Extreme Graphics 32 MB equivalent
Compaq® TFT5017m 15" flat panel display with integrated speakers
1.44 MB floppy drive (modular)
40X/10X/40X CD-RW drive with Roxio® CD Creator v5.1
Microsoft® Windows® 2000 Professional (Service Pack 2)
Integrated Intel® PRO/100 VM network connection
Three years parts and labor
Three years next business day onsite

WAVE HSD - High Sensitivity Detection Module

Incorporates fluorescence detection and intercalation chemistries to provide sensitivity enhancements for the detection of ds- and ss- DNA and RNA without fluorescently labeled primers.

WAVE HSD consists of:

- WAVE® FDX - Fluorescence Detector
Wavelength range: λ_{ex} , 200–850 nm; λ_{em} , 250–900 nm
Fluorescence source: 150 W Xenon lamp
- WAVE® HSX - High Sensitivity Accessory

Optional Equipment

WAVE Fragment Collector Model FCW 200

Up to 192 samples can be collected in two 96 well plates or in individual 200 µL PCR tubes.

Physical Dimensions

Typical layout including the computer but without the printer

Dimensions: (142 cm W x 64 cm D x 69 cm H) (56" W x 25" D x 27" H)

Weight: 80 kg (180 lb)

Product Name

WAVE HS System 3500

WAVE HS System 3500A

WAVE HS System 3500HT

Catalog No.

NHS-99-3500

NHS-99-3500A

NHS-99-3500HT

Quaternary Gradient Solvent Delivery System

Delivers up to four separate buffers

Flow rate control: 0.1–1.5 ml/min

Flow rate accuracy: ± 2% (H₂O at 20°C)

WAVE Autosampler Model 7250

Dual plate:

- 2 X 96 samples (standard)
 - 2 X 384 samples (optional)
- Integrated Accelerator (standard on 3500A and 3500HT)
Temperature control: Factory preset 14°C ± 1°C;
adjustable 4°C to ambient
Sample volume: 200 µL max.
Injection volume: 5–50 µL

High Precision Peltier Oven

Peltier heating and cooling

Temperature range: ambient to 80°C

Precision: ± 0.1°C

Reproducibility: ± 0.1°C

Linearity over full temperature range: ± 0.1°C

Heat and cool rate: Better than 1°C/min

UV/VIS Detector

Wavelength range: 190–700 nm

UV Source: Deuterium lamp

Printers

Upgrade to the HP DeskJet® 990CSE, Professional Series or equivalent for an additional cost.

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