INTEGRATED DNA TECHNOLOGIES

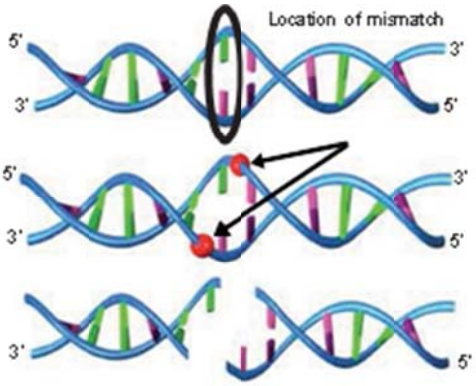
Surveyor® Mutation Detection Kit for WAVE® and WAVE HS Systems

Discover and Detect All Types of Genetic Variations

Surveyor Mutation Detection Kits provide a simple, accurate and cost-effective means to scan DNA fragments for mutations with unmatched sensitivity and specificity.

Complete Mutation Detection System: Contains Surveyor Nuclease, all reagents and plasmid controls.

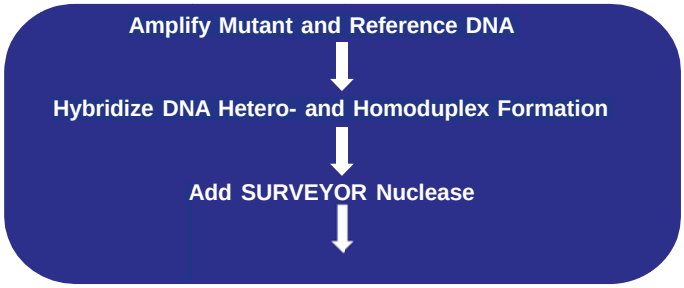
Surveyor Nuclease is a mismatch-specific endonuclease that recognizes mismatches in heteroduplexed DNA and cleaves both strands on the 3' side of the mismatch providing specific information on mutation location, orientation and type.



Designed for Multiple Mutation Discovery Applications

- Somatic, germ-line and mitochondrial mutations
- Insertions, deletions, substitutions and SNPs
- Low-copy mutations and pooled DNA samples

Mutation Detection in Four Easy Steps



Benefits

- Determines mutation loci
- Saves time and money
  - Streamlines DNA sequencing
  - Decreases sequencing backlog and analysis time
  - Validates sequencing results and analysis
  - Decreases chromatogram analysis by 90%
- No post-PCR or post-reaction clean-up
- High throughput sensitivity and specificity

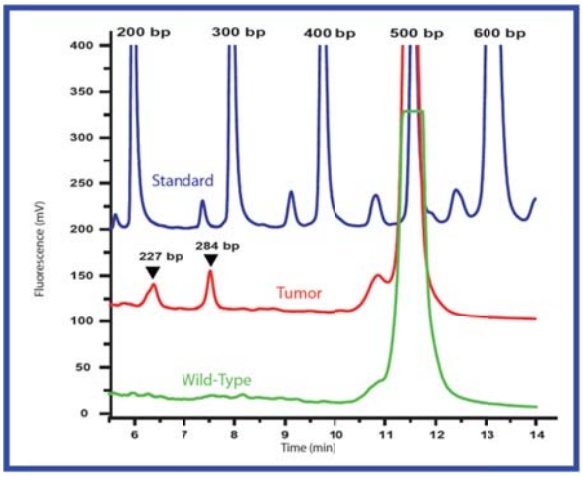


Figure 1. Detection of sequence variant in mitochondrial DNA using Surveyor Nuclease and the fragment analysis function of the WAVE HS System.

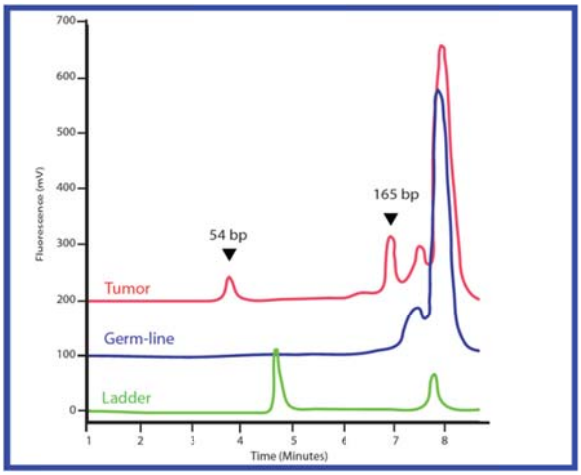


Figure 2. WAVE HS analysis of Surveyor Nuclease treated TSC1 exon 20 PCR product from prostate tumor. Analysis indicates that a low minority mutation is present in the sample, and the mutation is approximately 50 bp from one end of the 220-bp PCR product.

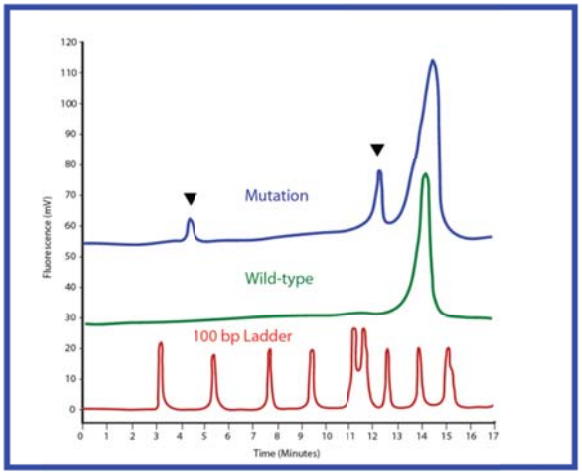


Figure 3. Surveyor detection of patient with heterozygous germ-line mutation in the 726-bp amplicon spanning the core promoter region of the PTEN gene – Cowden Syndrome.

Surveyor Mutation Detection Kit Components – All Optimized to Work Together

- **Surveyor Nuclease W**
- **Surveyor Nuclease Enhancer W2**
- **Surveyor Nuclease Enhancer Cofactor**
- **Stop Solution**
- **Control Plasmids and Primers**
- **0.15M Mg_2Cl Solution**

Products

Surveyor Mutation Detection Kit for WAVE and WAVE HS Systems

Quantity	Catalog No.
25 reactions	706035
100 reactions	706030
1,000 reactions	706031

Shipping and Storage

Surveyor products are shipped frozen. Store product at -20 ºC in a non-frost-free freezer. Enzyme is guaranteed for a period of 6 months if stored as directed.

Quality Control

Every component is quality control tested as indicated on the certificate of analysis, included in each kit.

Selected References

1. DHPLC/Surveyor Nuclease: A Sensitive, Rapid and Affordable Method to Analyze BRCA1 and BRCA2 Mutations in Breast Cancer Families. Pilato, B. et al. *Mol. Biotechnol.* 52, 8-15. (2011).
2. A molecular analysis of mutations at the complex dumpy locus in Drosophila melanogaster. Carmon, A. et al. *PLoS ONE* 5, e12319. (2010).
3. Screening for mutations in kidney-related genes using Surveyor nuclease for cleavage at heteroduplex mismatches. Voskarides, K. & Deltas, *C. J. Mol. Diagn.* 11, 311-318. (2009).
4. Novel method for genomic analysis of PKD1 and PKD2 mutations in autosomal dominant polycystic kidney disease. Tan, Y. et al. *Hum. Mutat.* 30, 264-272. (2009).
5. Single nucleotide polymorphisms, apoptosis, and the development of severe late adverse effects after radiotherapy. Azria, D. et al. Clin. *Cancer Res*. 14, 6284-6288. (2008).
6. Rapid identification of unknown heteroplasmic mutations across the entire human mitochondrial genome with mismatch-specific Surveyor Nuclease Bannwarth, S. et al. *Nat. Protoc*. 1, 2037-2047. (2006).
7. Mitochondrial DNA damage and repair in RPE associated with aging and age-related macular degeneration. Lin, H. et al. *Invest. Ophthalmol. Vis. Sci.* 52, 3521-3529. (2011).
8. Allelic dilution obscures detection of a biologically significant resistance mutation in EGFR -amplified lung cancer. Engelman, J.A. et al. *J. Clin. Invest.* 116, 2695-2706. (2006).
9. A rapid and sensitive enzymatic method for epidermal growth factor receptor mutation screening. Jänne, P.A. et al. *Clin. Cancer Res*. 12, 751-758. (2006).
10. Temperature-mediated heteroduplex analysis for the detection of drug-resistant gene mutations in clinical isolates of Mycobacterium tuberculosis by denaturing HPLC, Surveyor nuclease. Shi, R. et al. *Microbes Infect*. 8, 128-135. (2006).

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