

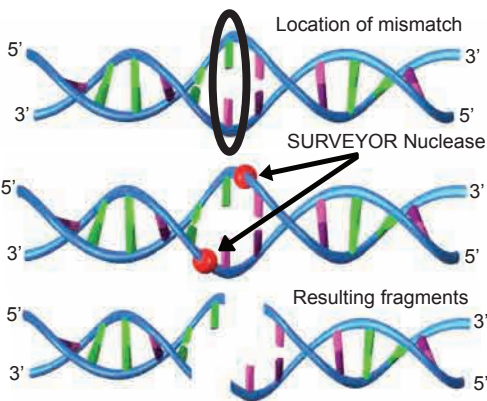
SURVEYOR® Mutation Detection Kit

Universal Primer Fluorescent Capillary Electrophoresis

Discover and Detect All Types of Genetic Variations

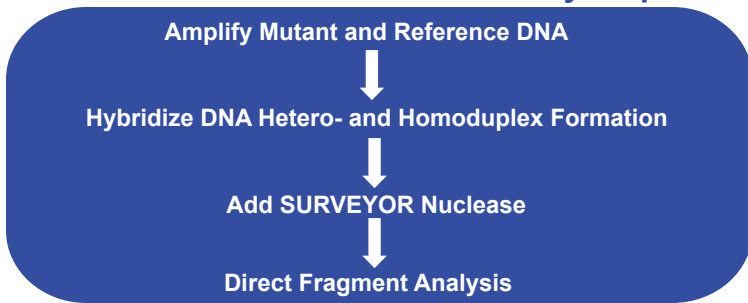
The SURVEYOR Mutation Detection Kit for Universal Primer Fluorescent Capillary Electrophoresis detects mutations in DNA amplified with two fluorescent primers when digested with SURVEYOR Nuclease for subsequent analysis by fluorescent capillary electrophoresis using an ABI PRISM® Genetic Analyzer and ABI GeneScan™ software.

Complete Mutation Detection System: Containing SURVEYOR Nuclease, all reagents, control plasmids and **two fluorescent universal primers** labeled with fluorescein and TAMRA™.



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.

Mutation Detection in Four Easy Steps



Designed for Multiple Mutation Discovery Applications

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

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

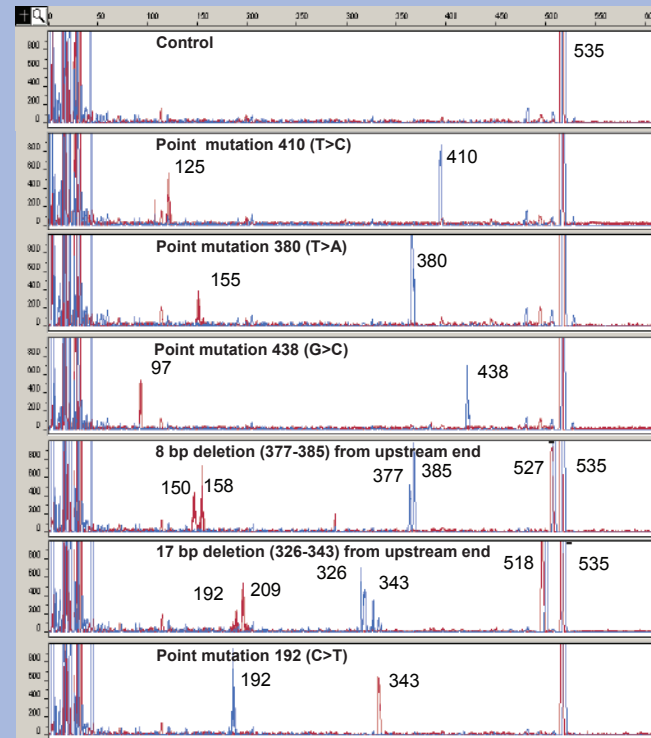


Figure 1. SURVEYOR Nuclease detection of Somatic Mutations in an exon of the VHL (von Hippel-Lindau) tumor suppressor gene from six different genomic DNA tumor samples detecting point and deletion mutations.

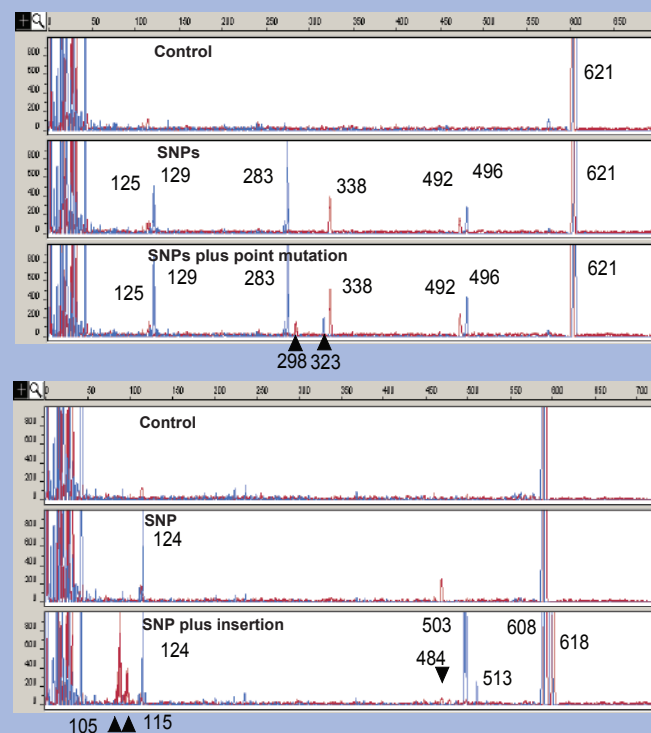


Figure 2. SURVEYOR Nuclease detection of Germ-line mutations in patient samples by Fluorescent Capillary Electrophoresis in two genomic DNAs detecting three heterozygous SNPs, insertions and deletions. The identity was determined and the position was confirmed for each mutation by DNA sequencing. Numbers indicate fragment sizes.

SURVEYOR Mutation Detection Kit Components – All Optimized to Work Together

- SURVEYOR Nuclease L
- Stop Solution
- Two DNA Control Plasmids with inserts that differ by a single base pair:
 - Control Plasmid FT-C
 - Control Plasmid FT-G

Control plasmids are provided in separate vials with forward and reverse primers needed for PCR amplification. They comprise both the sequence specific primers with the Universal sequence tails and the fluorescein-labeled FKS and TAMRA-labeled TPB Primers.

- Two DNA Control Plasmids with inserts that differ by a single base pair:
 - FKS Primer contains a fluorescein fluorophore with the sequence (KS): 5'-TCGAGGTCGACGGTATCGAT-3'
 - TPB Primer contains a TAMRA fluorophore with the sequence (PB): 5'-TGACGAGTAGACGCTGGTAG-3'
- T4D-FTHR Matrix Standards used to generate a matrix file required for four-color fluorescent fragment detection using the ABI PRISM® 3100 Genetic Analyzer. The standards consist of a mixture of four DNA fragments 100, 120, 140 and 160 bp in length labeled with fluorescein *(blue), TAMRA™ (yellow), HEX™ (green) and ROX™ (red), respectively.

Products

SURVEYOR Mutation Detection Kit for Universal Primer Fluorescent Capillary Electrophoresis

Quantity	Catalog No.
32 reactions	706101
96 reactions	706102
384 reactions	706103

SURVEYOR Mutation Detection Kit for Universal Primer Fluorescent Capillary Electrophoresis with Maximase™ Polymerase and dNTPs

Quantity	Catalog No.
32 reactions	SP2070
96 reactions	SP2071
384 reactions	SP2072

Related Products

Taq polymerase introduce errors (i.e. mutations) into the amplicon that contributes to background noise. High-fidelity proofreading polymerase blends are recommended to decrease this background but maintain yield. Use Maximase Polymerase for high-fidelity PCR.

	Catalog No.	Quantity
Maximase Polymerase with dNTPs	SP2100	100 units

Shipping and Storage

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

Quality Control

Every component has met Transgenomic quality control standards. Refer to the *Certificate of Analysis* for details.

Selected References

1. **Rapid identification of unknown heteroplasmic mutations across the entire human mitochondrial genome with mismatch-specific Surveyor Nuclease** Bannwarth, S., Procaccio, V., Paquis-Flucklinger, V., *Nature Protocols* VOL.1, NO.4 2037-2047. (2006).
2. **Allelic dilution obscures detection of a biologically significant resistance mutation in EGFR -amplified lung cancer.** Engelman, J.A., Mukohara, T., Zejnullahu, K., Lifshits, E., Borrás, A.M., Gale, C.M., Naumov, G.N., Yeap, B.Y., Jarrell, E., Sun, J., Tracy, S., Zhao, X., Heymach, J.V., Johnson, B.E., Cantley, L.C., Janne, P.A., *J. Clin. Invest.* 116, 2695-2706. (2006).
3. **The JAK2 V617F mutation occurs in hematopoietic stem cells in polycythemia vera and predisposes toward erythroid differentiation.** Jamieson, C.H., Gotlib, J., Durocher, J.A., Chao, M.P., Mariappan, M.R., Lay, M., Jones, C., Zehnder, J.L., Lilleberg, S.L., Weissman, I.L. *Proc. Natl. Acad. Sci.* 103, 6224-6229 (2006).

Corporate Headquarters

Transgenomic, Inc.
12325 Emmet Street
Omaha, NE 68164, USA
Phone: (888) 233-9283 • (402) 452-5400
Fax: (402) 452-5401
Email: info@transgenomic.com

Transgenomic Limited
40 Watt Road, Hillington Park
Glasgow G52 4RY, UK
Phone: +44 (0) 141 892 8800
Fax: +44 (0) 141 883 5967
Email: sales@transgenomic.com



www.transgenomic.com

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