BaseScope™

ACD™ a bio-techne brand

VISUALIZE A SPECIFIC RNA LOCUS AT SINGLE CELL RESOLUTION

- Gain insights on tissues by linking single-cell data with spatial and morphological context! Unlike existing techniques such as PCR or NGS, imagine the ability to preserve spatial and morphological information at cellular resolution.
- Experience a whole NEW ERA of SPATIAL GENOMICS! Envision the detection of splice variant, short/highly homologous gene, and point mutation at single cell resolution.
- The revolutionary BaseScope™ technology enables highly specific and sensitive detection and VISUALIZATION of RNA targets with down to ONE nucleotide differences, *IN SITU*, with SPATIAL MAPPING and MORPHOLOGICAL CONTEXT, under a brightfield light microscope.

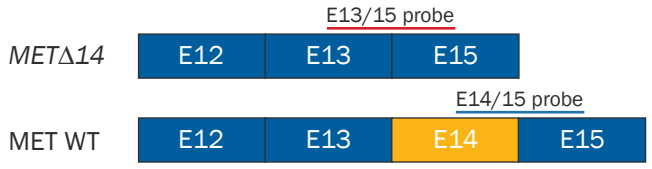
EXON JUNCTION/SPLICE VARIANT DETECTION

Supporting research of genome-wide splicing events and understanding functionality of those variants

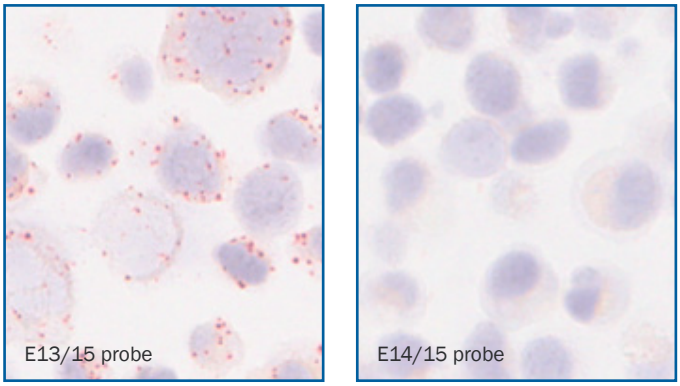
Applications:

- Exon junctions/splice variants
- Circular RNA (circRNA)
- Gene fusion
- Gene knockout (KO)

Example of MET mRNA Probe Design:



Splice Variant Example: Detection of exon 14 skipped variant of *MET* mRNA (*MET* Δ14) in lung cancer cell line.



The probe for exon junctions 13/15 detected expression of *METΔ14* only in the H596 cell line. The probe for exon junctions 14/15 did not detect expression of wild-type MET in the H596 cell line.

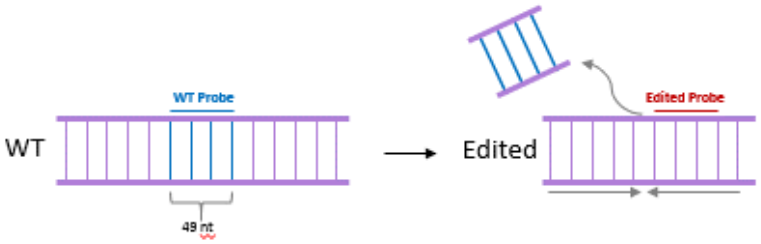
SHORT TARGET SEQUENCE DETECTION

Supporting growing research on short or highly homologous markers by monitoring gene expression *in situ*

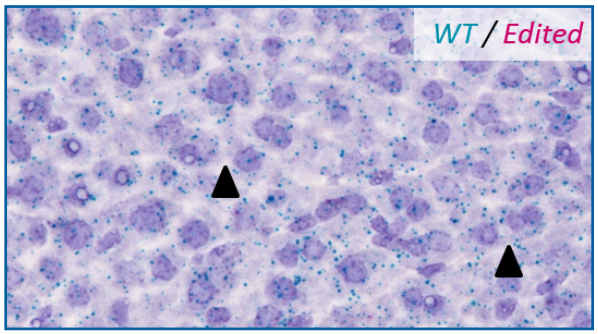
Applications:

- Short targets/highly homologous gene sequences (50-300nt)
- T-cell receptors (TCRs) and CDR sequences in T-cell clones
- Gene editing/CRISPR
- Pre-miRNA

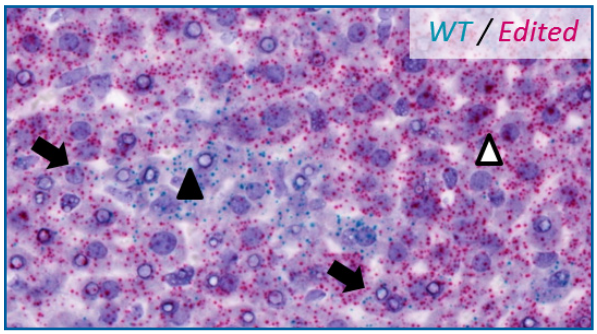
Gene Editing Example: Specific and sensitive duplex detection to discern monoallelic or biallelic gene-editing status of cells in CRISPR/Cas9-treated liver tissues.



Vehicle



CRISPR/Cas9



WT-only hepatocytes

Edited-only hepatocytes

Co-expressing hepatocytes

The WT sequence (green) was detected in unedited liver (vehicle) and the Edited liver (CRISPR/Cas9), whereas the Edited sequence (red) was detected only in the Edited liver (CRISPR/Cas9). Most hepatocytes expressed either WT only or Edited only, however a few cells co-expressed both the WTW and Edited sequences.

POINT MUTATION DETECTION

Supporting research of genetic mutations at down to a single nucleotide alteration

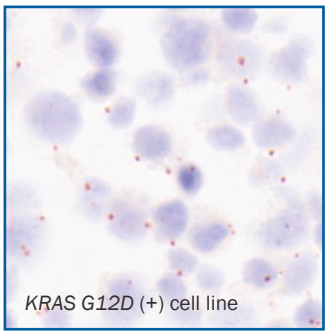
Applications:

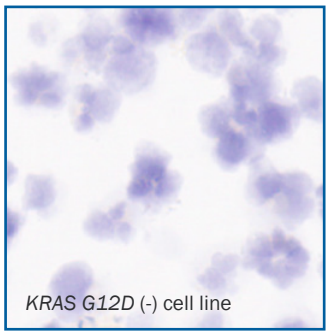
- Point mutation
- Short Insertions/Deletions
- Homologues

ACD Validated Point Mutations Only.

To see a list of ACD Validated Point Mutations, please visit **acdbio.com/science/applications/research-areas/point-mutation**

Point Mutation Example: Detection of *KRAS G12D* in KRAS mutant and wild type cell lines.





The probe specific for mutant *KRAS-G12D* was detected only in the SNU-C2B cell line and not in the Hut78 cell line.

- Be the first to spatially map splice variants, short/highly homologous genes, and point mutations at single cell resolution in the tissue context with the BaseScope™ assay.
- BaseScope™ assays are available for both manual or automated platforms.

Learn more by visiting **acdbio.com**

bio-techne®

7707 Gateway Blvd
Newark, CA 94560 USA
www.acdbio.com
(510) 576-8800
info.acd@bio-techne.com