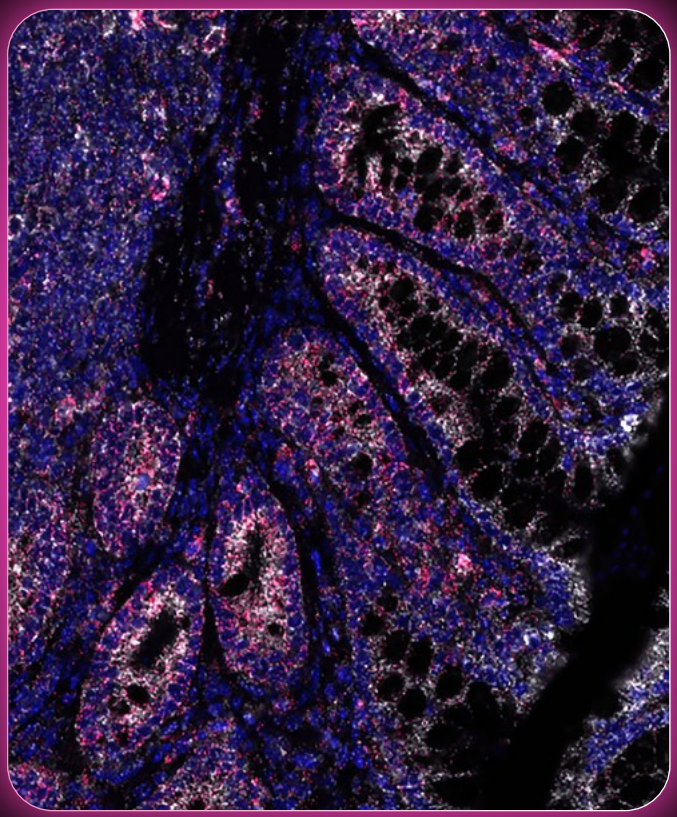
bio-techne® / ACD

Spatial Biology
RNAscope Multiplex Fluorescent Assay

Revolutionizing Spatial Multiomics

The gold-standard RNAscope™ Multiplex Fluorescent Assay

Same-section, Protease-free RNA and Protein Multiomic Detection with RNAscope Multiplex Fluorescent Assay



Visualize Cell Phenotypes and Function with Same-Section Spatial Multiomics

Revolutionizing the RNAscope Multiplex Fluorescent Assay with protease-free detection using the newly innovated PretreatPro for same section RNA and protein detection. Powered by the industry-leading RNAscope technology and the highly sensitive TSA chemistry, this novel approach ensures unparalleled accuracy and reliability for your molecular research. Unlock new possibilities in spatial biology with seamless, simultaneous visualization of RNA and protein in their native state. Experience the trusted precision you rely on, now redefined.

TSA-based Opal Chemistry

Unmatched sensitivity and performance

Protease-free

Preserve antigen integrity and morphology

Same-section RNA and Protein

Reveal more insights

Combining Sensitivity with Flexibility

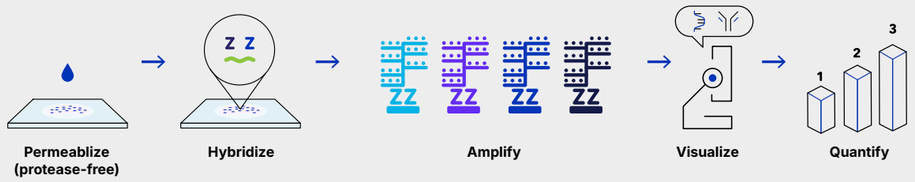
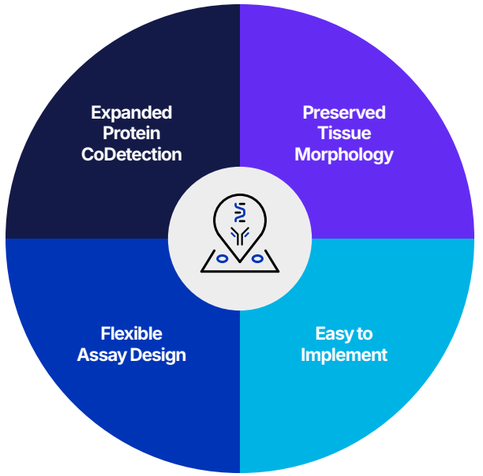


Fig 1: Simplified illustration showing the experimental workflow of RNAscope Multiplex Fluorescent Assay

RNAscope Protease-free Workflow



Expanded Protein CoDetection

Conserve precious samples by co-detecting protein with any IHC-validated antibody and RNAs on the same tissue section.

Preserved Tissue Morphology

Visually stunning images and improved precision in quantitative data analysis.

Easy to Implement

Seamlessly integrate with existing RNAscope protocols.

Flexible Assay Design

Workflow options to use either protease-free or protease based on experimental goals.

Gain Deeper Insights with The Gold-standard RNAscope Multiplex Fluorescent Assay

Map spatio-temporal signatures

Spatially map and validate expression of target genes within specific cell types identified from spatial transcriptomic studies

Characterize cell phenotypes and function

Profile immune markers with protein and activation states with cytokine RNAs.

Interrogate infectious agents

Visualize viral, microbial RNA/DNA with host cell marker proteins.

Visualize transgene expression in animal models

Map gene transcripts in animal models with protease-sensitive reporter proteins like GFP, TdTomato.

See More with Confidence

The NEW protease-free RNAscope™ Multiplex Fluorescent Assay enables detection of protease-sensitive epitopes in human breast cancer.

A) RNAscope standard workflow

B) RNAscope protease-free workflow

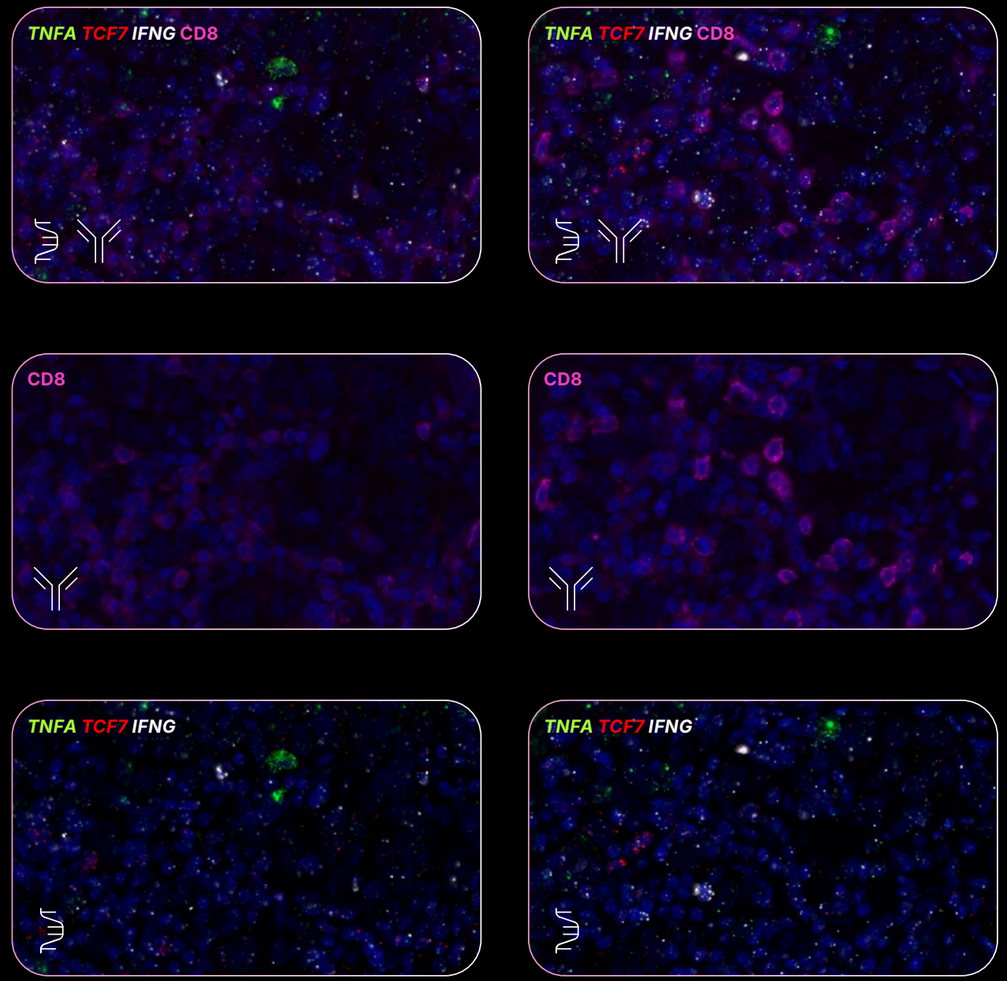


Fig 2: RNAscope™ Multiplex Fluorescent Assay using protease-free workflow reveals T cell phenotypes in FFPE human breast cancer tissue. Same section staining of three RNA probes labeling inflammatory cytokines *TNFA*, *IFNG*, and transcription factor *TCF7* along with cell specific marker proteins labeling cytotoxic T cells (CD8) Nuclei were stained using DAPI. **(A)** Challenging CD8 epitope showed sensitivity to protease treatment as seen by the reduction in signal intensity. **(B)** In contrast, the protease-free workflow preserved integrity of the sensitive epitope and enabled both RNA and subsequent protein visualization without enzymatic disruption.

Study Interneuron Diversity

Mouse Brain Cortex

Visualize inhibitory neuronal subtypes using RNAscope protease-free workflow

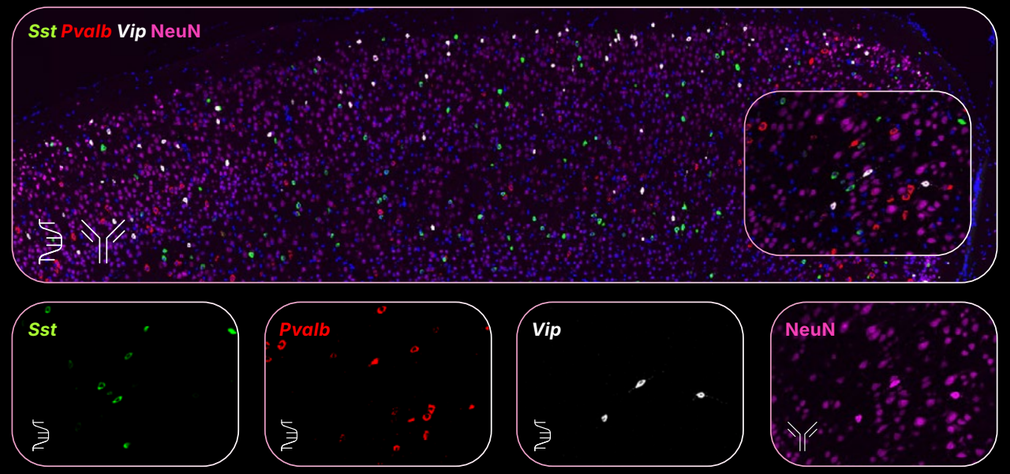


Fig 3: Interneuron diversity in FFPE mouse brain cortex visualized using RNAscope™ Multiplex Fluorescent Assay. Inhibitory neuronal subtypes are labeled using three RNA probes, *Sst*, *Pvalb* and *Vip* followed by sequential Immunofluorescence of neuronal specific protein marker NeuN. Nuclei were stained using DAPI. The new protease-free workflow enabled efficient RNAscope Multiplex staining and a subsequent IF staining for enzyme-sensitive NeuN protein.

Profile Tumor Heterogeneity

Human Cervical Cancer

Reveal cytotoxic T-cell phenotypes with protease-free workflow

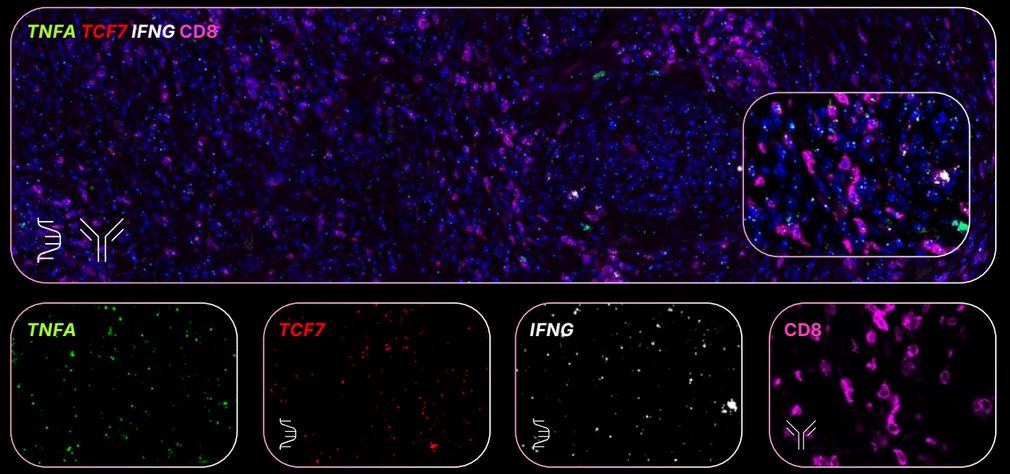


Fig 4: Assessing Cytotoxic T cell phenotype in FFPE human cervical cancer Tissue using RNAscope™ Multiplex Fluorescent Assay. Same section staining of three RNA probes *TNFA*, *IFNG*, and *TCF7* labeling inflammatory cytokines and transcription factor crucial for T cell development along with cell marker protein CD8. Nuclei were stained using DAPI. Protease-free workflow preserved the sensitive CD8 epitope and enabled efficient IF staining.

Proven Performance Across a Wide Range of Tissues

Human FFPE

Cancer	Normal
Brain	Brain
Breast	Breast
Colon	Colon
Cervix	Lung
Head	Stomach
Neck	Liver
Lung	Bladder
Stomach	Skin
Ovary	Pancreas
Prostate	Tonsil
Liver	

Mouse

FFPE	Frozen
Liver	Liver
Brain	Brain
Lung	Brain (Thick, 20um)
Kidney	Lung
Heart	Kidney
Spleen	Heart
Intestine	Spleen
Colon	Intestine
	Colon

Get Started Today for UNLIMITED POSSIBILITIES

Ordering Information

Kit Name	Number of Slides	Catalog Number
RNAscope™ Multiplex Fluorescent Reagent Kit v2 Pretreatment, Wash & Detection Reagents Opal fluorophores to be purchased separately	20	323100
RNAscope™ Intro Pack for Multiplex Fluorescent Reagent Kit v2 Multiplex Fluorescent Reagents Kit, FFPE Control Slide Pack -Mouse 3T3 Cell Pellet, RNAscope™ 3-plex Positive Control and Negative Control slides Opal fluorophores to be purchased separately	20	323135 **(Human Hs)** 323136 **(Mouse Mm)** 323137 **(Rat Rn)**

Updated user manuals highlighting the new workflow:
RNAscope™ Multiplex Fluorescent Reagent

For more information regarding the protease-free workflow

Scan the QR Code or Visit:
bio-techne.com/rnascope-protease-free

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