Expand access and simplify sample management with Visium CytAssist

The new Visium CytAssist is a compact, benchtop instrument that facilitates the transfer of transcriptomic probes from standard microscope slides to Visium slides, enabling spatial profiling insights to be gained from even more samples. Compatible with hematoxylin and eosin (H&E)- or immunofluorescence (IF)-stained FFPE tissue sections, the CytAssist instrument allows pre-sectioned tissues to be used for the Visium workflow. Further maximize your Visium experiments by pre-screening tissue sections using standard histological techniques to find biologically significant sections then precisely align those sections within the Visium Capture Area using the CytAssist instrument.

Highlights

- Simplify sample handling with facilitated transfer of transcriptomic probes from standard slides onto the Capture Area of a Visium slide
- Expand sample compatibility to pre-sectioned and archived* slides
- Maximize insights from Visium experiments by pre-screening tissue sections with standard histological techniques to select the most biologically significant sections
- Precisely capture probes from up to two FFPE tissue sections per run in less than one hour using CytAssist specific slides and reagents

*Per specified storage conditions.

Workflow comparison

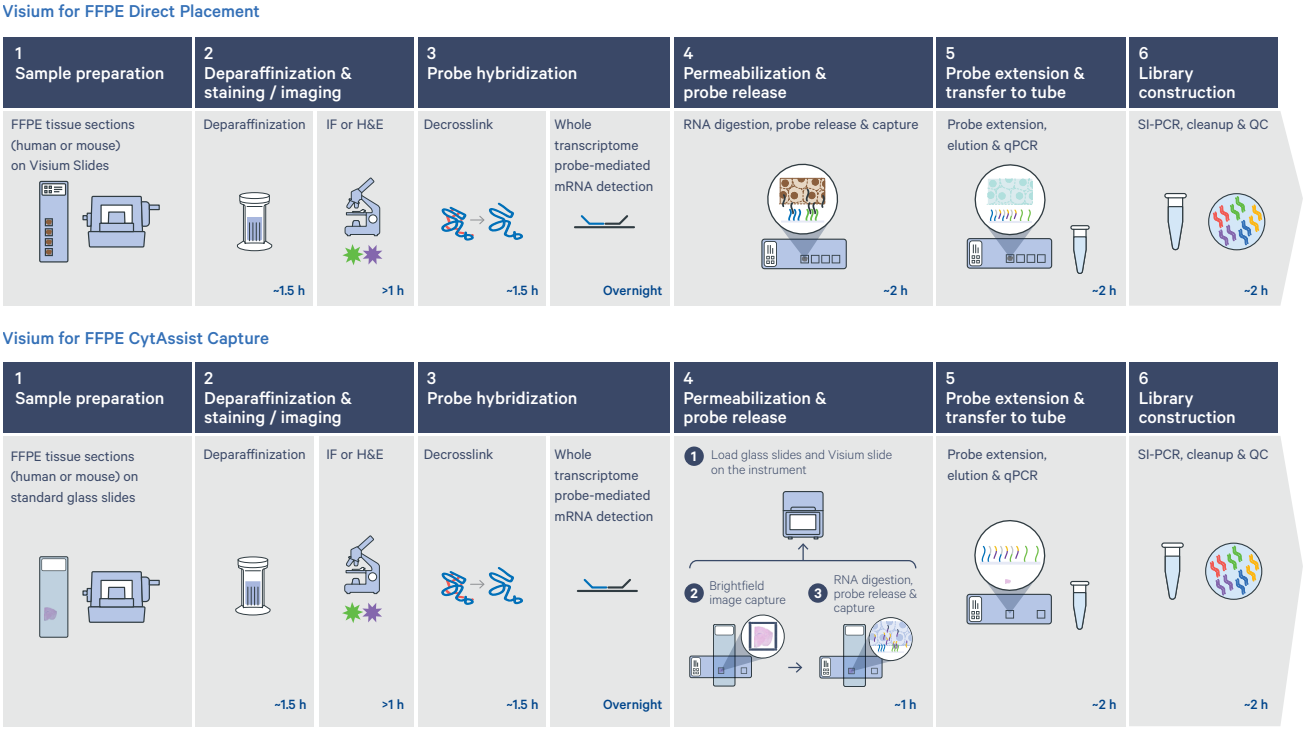

Figure 1. Visium CytAssist enables simplified automated transfer of transcriptomic probes in FFPE samples from standard glass slides to Visium capture slides. **A.** In the Visium for FFPE direct placement workflow, an FFPE tissue section is placed directly onto a Visium slide Capture Area, deparaffinized, stained, and imaged (either H&E for morphology or IF for protein co-detection). The gene expression profiling for the FFPE assay leverages RNA-templated ligation of probe pairs for highly specific and sensitive detection of the whole transcriptome (Step 3). The ligated probe pairs are captured on the slide following tissue permeabilization, extended to incorporate complements of the spatial barcodes, and sequencing libraries are prepared (Steps 4–6). **B.** In the Visium for FFPE CytAssist capture workflow, the first three steps—sectioning, deparaffinization, staining—and imaging (H&E or IF) take place on a standard glass slide. After probe hybridization (Step 3), two standard glass slides and a two Capture Area Visium slide are placed in the CytAssist instrument so that the tissue sections on the standard slides can be aligned on top of the two Visium Capture Areas. Within the instrument, a brightfield image is captured to provide spatial orientation for data analysis, followed by hybridization of transcriptomic probes to the Visium slide (Step 4). The remaining steps, starting with probe extension, follow the standard Visium FFPE workflow outside of the instrument (Step 5–6).

Visium CytAssist product compatibility

- Visium for FFPE 2-reaction slides with 6.5 x 6.5 mm or 11 x 11 mm Capture Areas
- Visium Spatial Gene Expression for FFPE

Visium CytAssist Target Specifications	
Weight	18.3 lbs
Dimensions (max)	8" x 12" x 13.1" (W x D x H)
Samples per run	2 input tissue sections
Temperature range	32–55°C
Run time range	30–90 minutes

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