

EVOS S1000 Spatial Imaging System

Spatial proteomics powered by concurrent multiplex immunofluorescence detection

The Invitrogen™ EVOS™ S1000 Spatial Imaging System streamlines multiplexed immunofluorescent image generation from tissue samples to enable fast insights into the spatial localization of proteins. The EVOS S1000 system can simultaneously image up to 8 targets plus nuclear stain in a single scan, utilizing on-the-fly spectral unmixing to resolve desired protein targets without bleed-through from neighboring channels. Get more data, fast, with the simple sophistication of the EVOS S1000 system.

EVOS S1000 system benefits

- **Fast**—generation of a fully unmixed, stitched 9-plex image of a 1 cm² tissue area at 20x in about an hour
- **Versatile**—multiplex spectral fluorescence, transmitted brightfield, phase-contrast, and color brightfield imaging
- **Sensitive**—high-resolution 4.2 megapixel, 16-bit CMOS camera
- **Variable magnification**—2.5x–40x objectives available for the 5-position slider
- **Efficiency**—automated laser and software-based autofocus routines help streamline image acquisition
- **Easy to use**—intuitive software makes image collection, navigation, and data retrieval simple for users of all experience levels
- **Flexible**—selection of more than 30 dyes included in the Invitrogen™ EVOS™ Spatial Software (compatible with primary antibody conjugates and spatial amplification reagents)
- **Enables confidence**—autogenerated quality metrics report helps ensure high-quality images are captured and provides actionable suggestions if improvements need to be made

Resolution of 9 dyes without cyclic detection

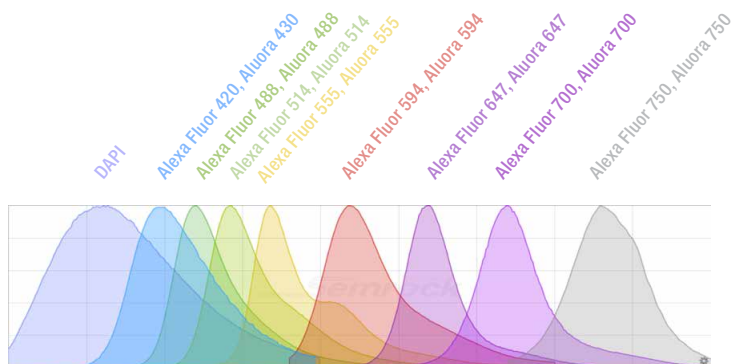


Figure 1. Spectral dye compatibility. DAPI, Invitrogen™ Alexa Fluor™ dye, and Invitrogen™ Aluora™ dye emission spectra are shown as an example of a 9-plex panel of dyes that can be simultaneously resolved by the on board EVOS S1000 software.

Whole tissue imaging with cellular resolution

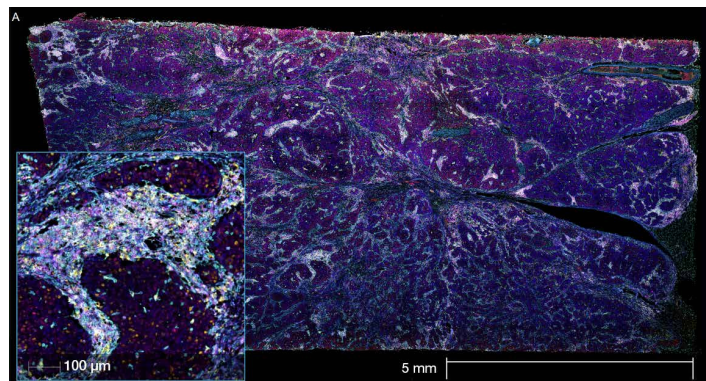


Figure 2. Visualization of cellular interactions within intact tissue. Invasive breast carcinoma stained for a panel of immuno-oncology targets. Immune cell targets (visualized at higher magnification, far left inset) were paired with proliferating cell markers and extracellular matrix proteins to define the complete sample.

Automated processing removes wavelength overlap to produce high-quality images

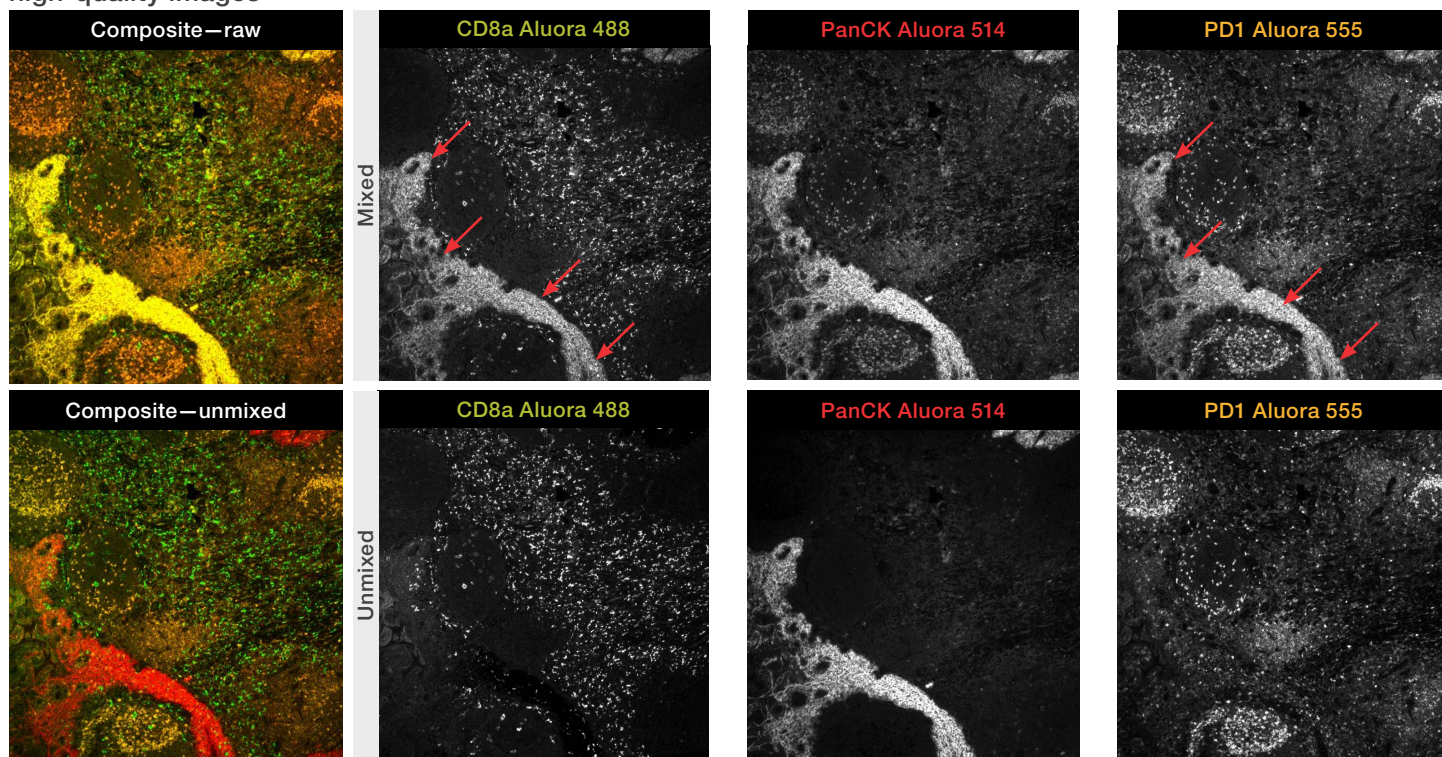


Figure 3. Raw (mixed, top) and processed (unmixed, bottom) images of human tonsil. Note the similar staining of structures in the 488 nm, 514 nm, and 555 nm channels in the raw images due to the overlap of the Aluora 514 dye signal into neighboring channels (red arrows). Automated processing (spectral unmixing) of this image with EVOS S1000 software distinguishes each channel into its own entity, and distinct staining is now apparent for each target. The resulting composite image is now more defined and useful for quantitative imaging. Primary antibodies to each target indicated were fluorescently conjugated using Invitrogen™ Aluora™ spatial amplification dyes and reagents.

Labeling products and technologies to help you achieve your imaging goals

When moving from traditional microscopy (3–4 targets) to spatial imaging (6–9 targets), bringing together the right antibodies and reagents can be a challenge. As a committed partner to your spatial imaging success, Thermo Fisher Scientific offers a full suite of products to effectively and efficiently label your targets.

Primary antibody conjugates Primary-secondary antibody detection



Explore the extensive catalog of Invitrogen™ primary and secondary antibodies verified for tissue applications and designed specifically for compatibility with EVOS S1000 spectral channels. Search by protein target, target species, conjugate, and more.

thermofisher.com/antibodies

Primary antibody conjugation kits



If your desired primary antibody isn't available in conjugated form, Invitrogen™ ReadyLabel™ kits enable fast, convenient labeling of antibodies in complex mixtures (e.g., cell culture supernatants) or solutions containing BSA or primary amine-containing buffer without a separate purification step.

thermofisher.com/readylabell

Aluora spatial amplification kits



Invitrogen™ Aluora™ spatial amplification kits and reagents are an excellent choice for low-abundance targets or when your primary antibody is in short supply. Through covalent modification, Aluora reagents deposit dyes onto target proteins, helping improve the signal-to-background ratio.

thermofisher.com/aluora

Learn more at thermofisher.com/evoss1000

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