Docket #: S23-533

Soma-print Based Cell Registration of Live and Post-mortem Tissue Images

Typically, cell live imaging and cell molecular profiling are performed on two different samples without the direct observation of two modalities of information on the exact same cells. The main challenge lies in tissue distortions and loss of spatial information during sample processing, such as slicing or chemical treatments.

Stanford researchers have developed a solution to track the spatial coordinates of the sample throughout the process. By maintaining a coordinated soma-print based reference system and correcting for distortions, the method allows researchers to map molecular profiles back to the same cells that were observed in vivo. This approach offers a new level of precision in studying organs like the brain, liver, or kidney, where understanding both cellular function and molecular properties is critical.

Related Stanford Docket S26-041 provides a modality-agnostic, **2D to 3D computational framework** for this soma-print based reference system that is simultaneously more rigorous, biologically realistic, and computationally practical for cell-level registration AND image-level registration.

Stage of Development
In vivo research: mouse brain neuron studies

Applications

- Cell registration research tool for: neuroscience, cancer, clinical diagnostics, drug development, immunotherapy, etc.

Advantages

- Large-scale alignment
- Precise
- Economical
- Reliable
- Only such method in the market

Patents

- Published Application: 20250299504

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