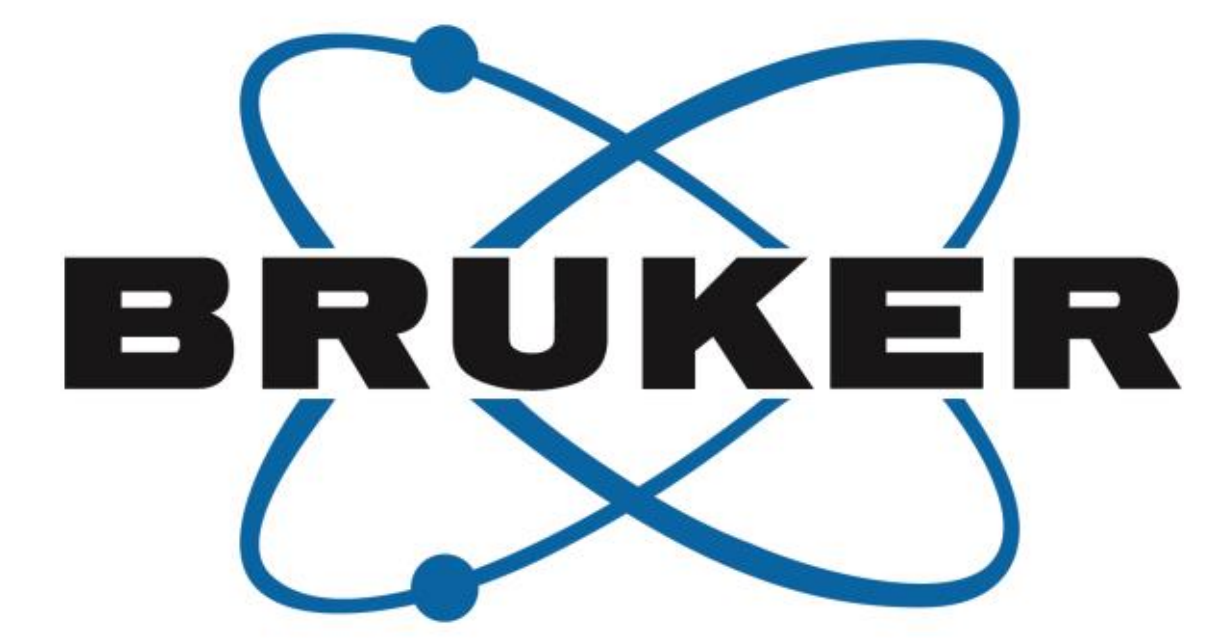


Spatiotemporal profiling of mouse embryo stage E11 – E14 with single-cell spatial whole transcriptomic assay

Michael Patrick¹, Liang Zhang¹, Isabel Lee¹, Sierra McKinzie¹, Shanshan He¹, Joseph Beechem¹

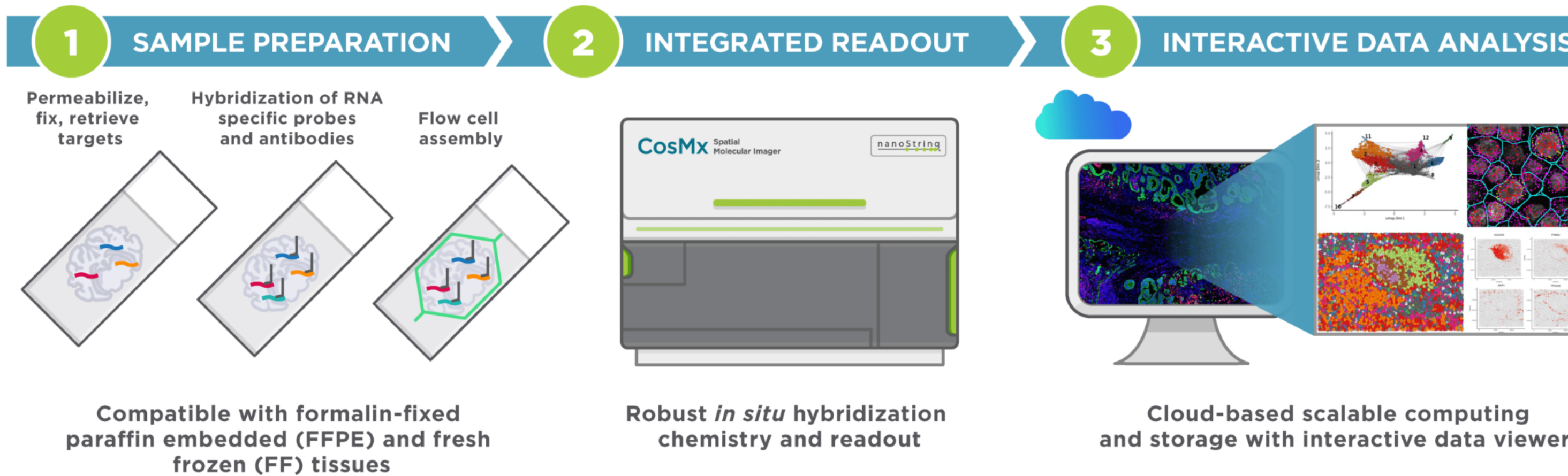
¹Bruker Spatial Biology®, Seattle, WA, USA

Scan here to download or learn more

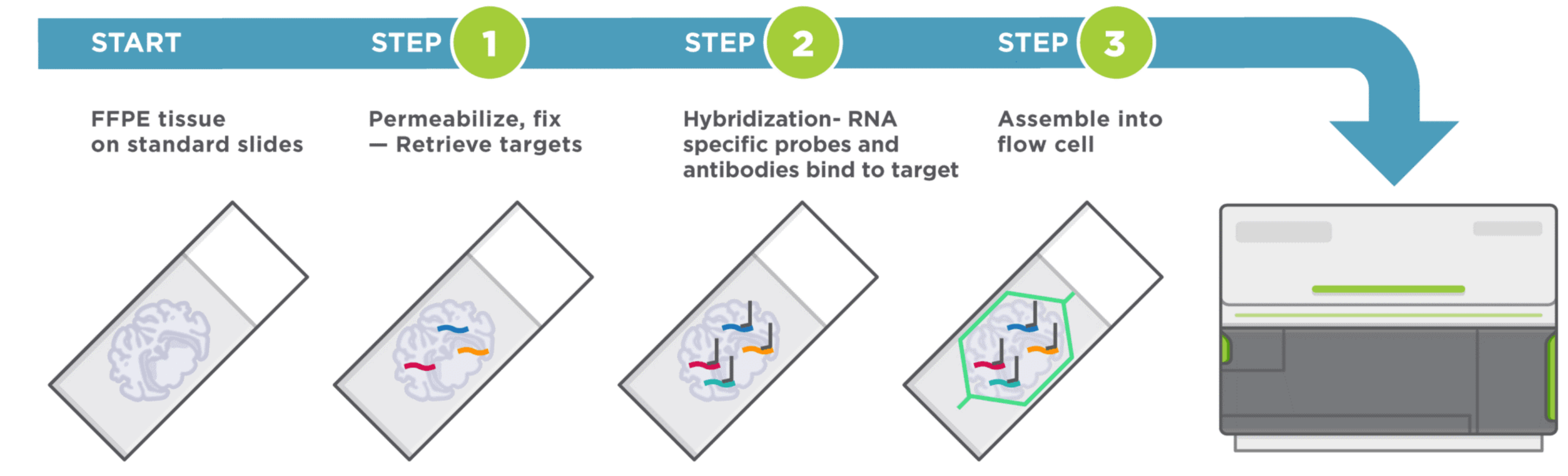


CosMx® Spatial Molecular Imager Workflow

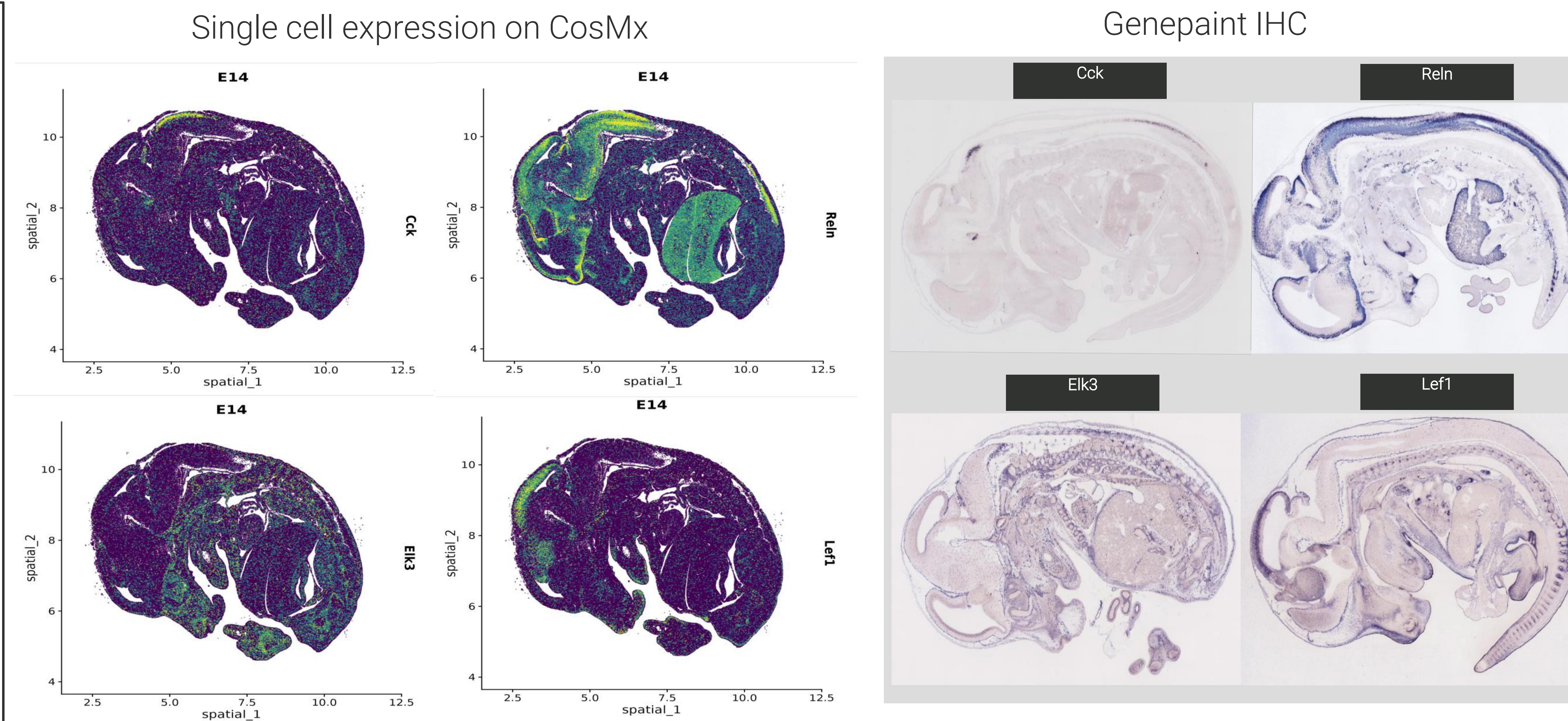
CosMx SMI delivers a comprehensive package which includes validated reagents, instrument, and data analysis software for a seamless sample-to-result workflow.



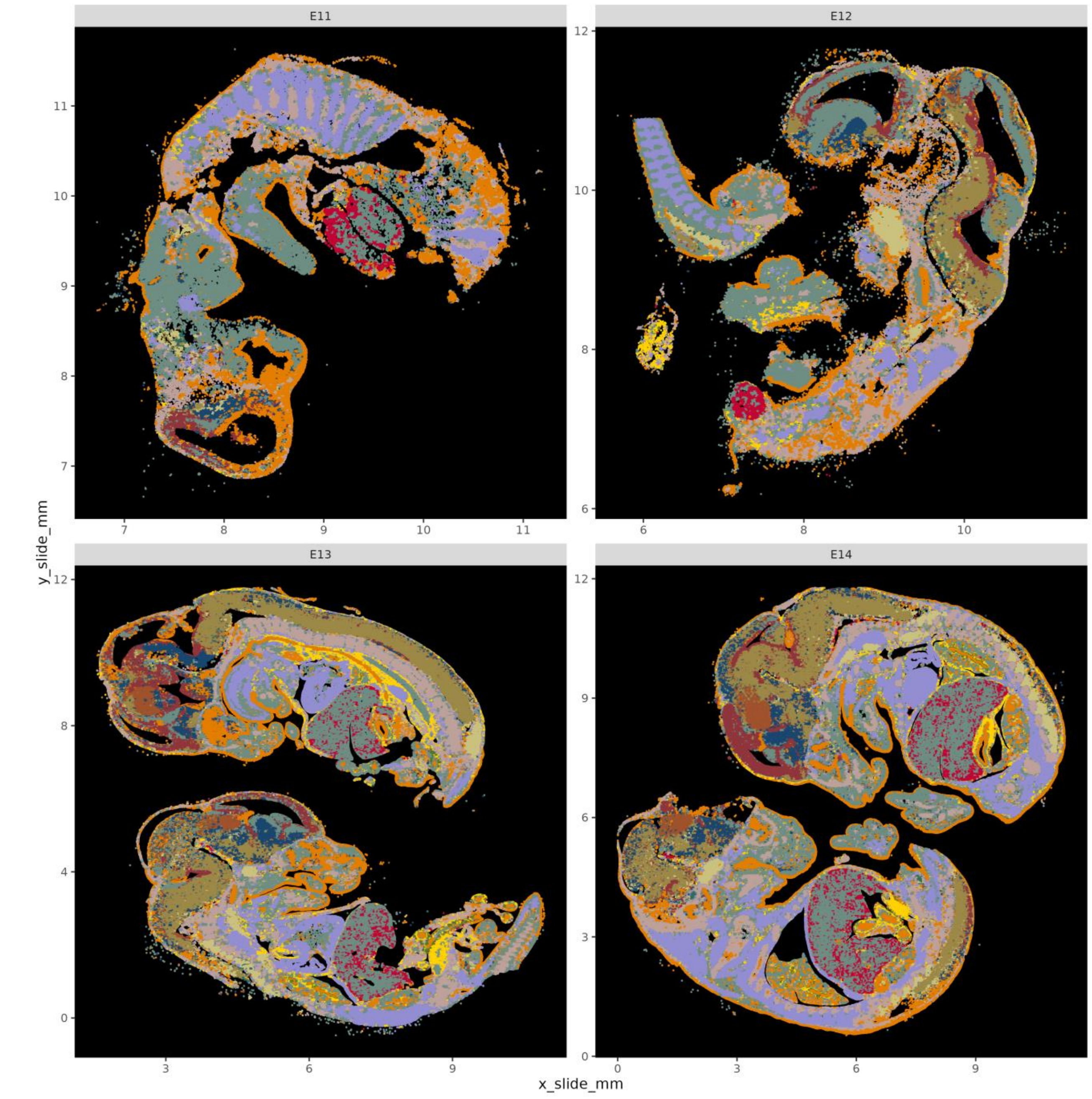
CosMx assay enables efficient single-cell spatial transcriptome profiling in intact FFPE tissue with automatable sample preparation.



Orthogonal Validation: CosMx SMI Spatial Expression corroborates publicly available IHC data.1

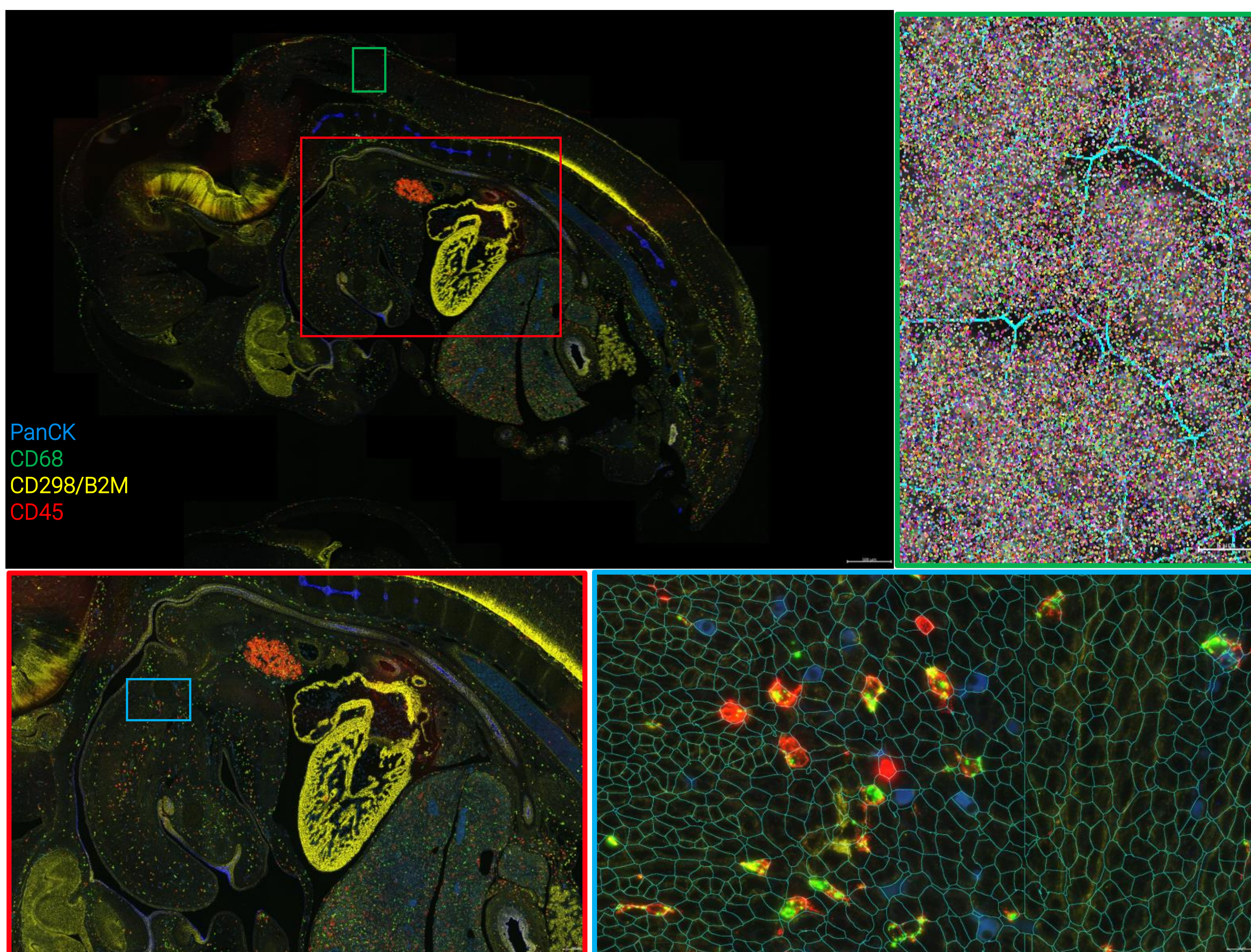


NOVAE Domains

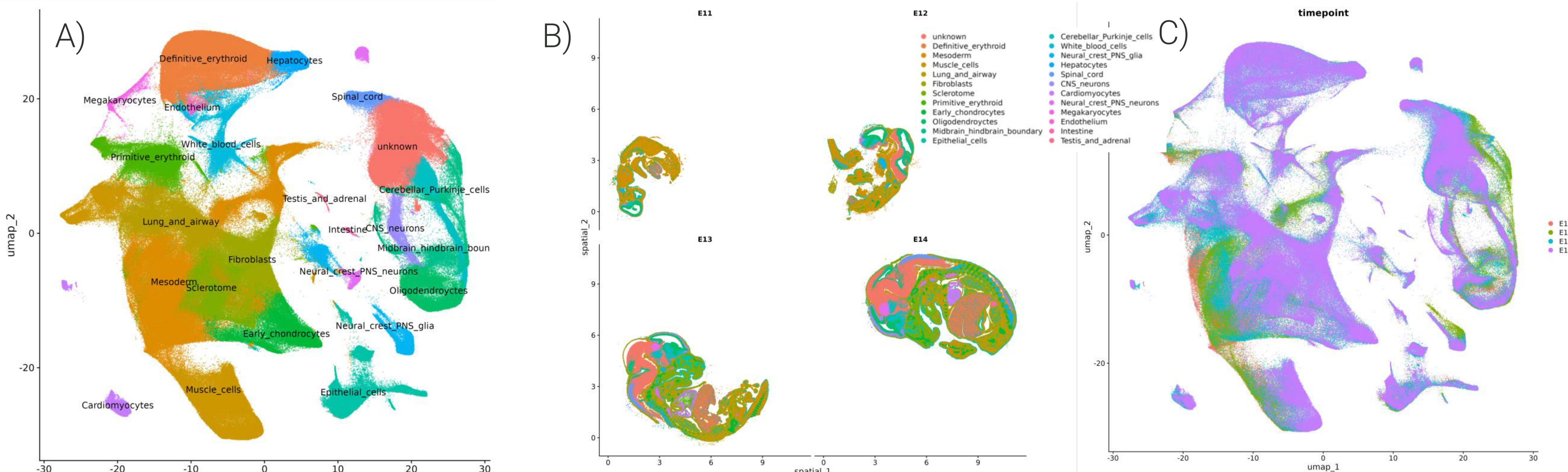
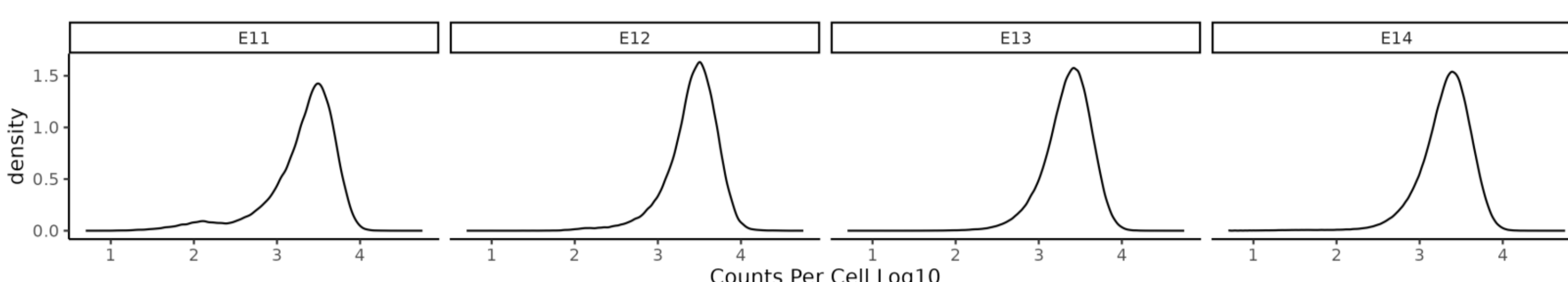


CosMx Mouse whole-transcriptome Assay

Single-cell spatial profiling of ~22,000 genes in ~ 1 million cells simultaneously

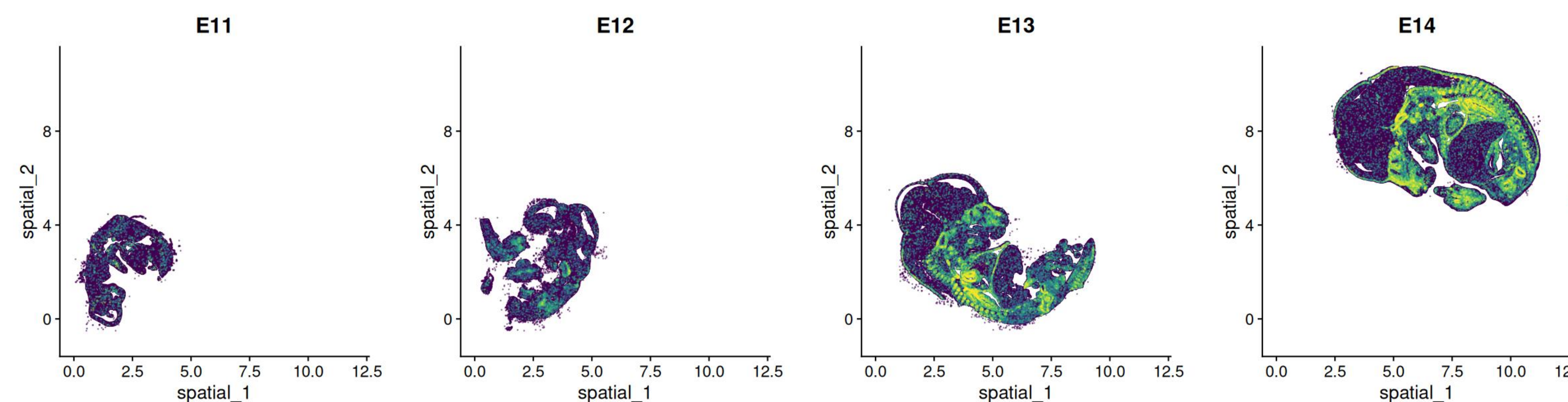


Timepoint	Transcripts/Cell	Unique Genes/Cell	Mean Area um2	Counts/Um2	Cells
E11	2752.442	1720.446	92.367	29.799	78240
E12	3170.765	2037.868	83.148	38.134	130193
E13	2682.915	1719.801	78.678	34.100	616412
E14	2529.286	1573.960	82.585	30.626	756916



A) UMAP with cell type annotations. B) Spatially resolved cell types in each embryo. C) UMAP colored by timepoints, showcasing no batch effects and clusters specific to certain time points

Gene Expression Across Timepoints

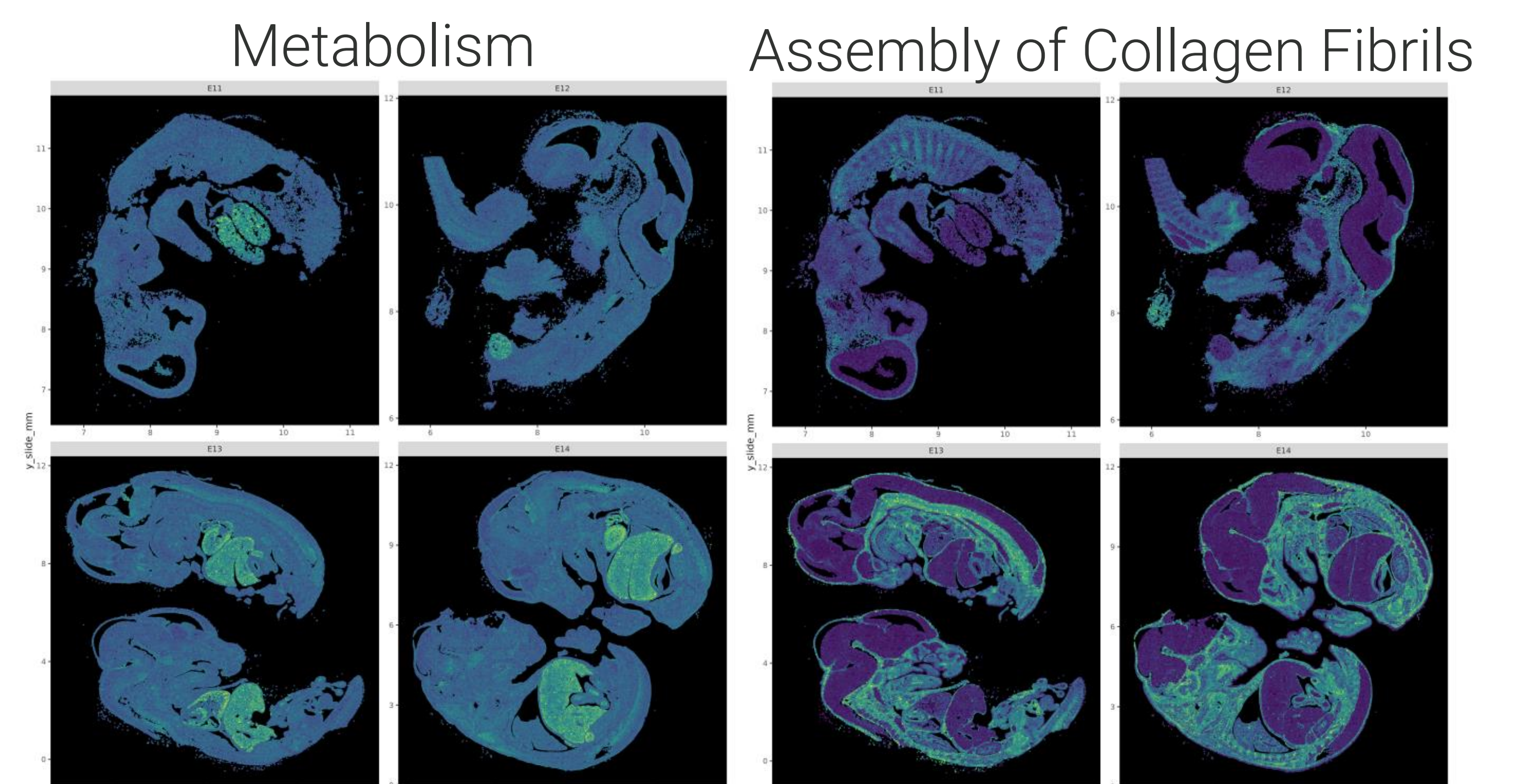


Citations

1. Visel A, Thaller C, Eichele G. GenePaint.org: an atlas of gene expression patterns in the mouse embryo. Nucleic Acids Res. 2004 Jan 1;32(Database issue):D552-6. doi: 10.1093/nar/gkh029. PMID: 14681479; PMCID: PMC308763.

REACTOME Pathways In Space

1,256 REACTOME pathways were calculated across 21,000 genes and plotted across time points in space.



Conclusion

CosMx Mouse WTX Assay delivers a first-of-its-kind opportunity to examine the development of mouse embryos in four dimensions using >20,000 spatially resolved genes. This study on mouse embryo development provides a first look at the limitless applications that a whole-transcriptome mouse panel can unlock for researchers including cancer research.