

Jun 03, 2025

KAPP-Sen TMC: 10x Xenium V1 with Segmentation Kit

DOI

<https://dx.doi.org/10.17504/protocols.io.x54v9o68zv3e/v1>

Emily Soja¹, Shruti Bhargava¹, Santhosh Sivajothi¹, William F Flynn¹, Elise T Courtois¹

¹Single Cell Biology Lab, The Jackson Laboratory, USA

Cellular Senescence Net...

KAPP-Sen TMC



Sergii Domanskyi

The Jackson Laboratory for Genomic Medicine

Create & collaborate more with a free account

Edit and publish protocols, collaborate in communities, share insights through comments, and track progress with run records.

Create free account

OPEN  ACCESS



DOI: <https://dx.doi.org/10.17504/protocols.io.x54v9o68zv3e/v1>

Protocol Citation: Emily Soja, Shruti Bhargava, Santhosh Sivajothi, William F Flynn, Elise T Courtois 2025. KAPP-Sen TMC: 10x Xenium V1 with Segmentation Kit . protocols.io <https://dx.doi.org/10.17504/protocols.io.x54v9o68zv3e/v1>

License: This is an open access protocol distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited

Protocol status: Working

We use this protocol and it's working

Created: June 03, 2025

Last Modified: June 03, 2025

Protocol Integer ID: 219494

Keywords: SenNet KAPP-Sen TMC, situ spatial transcriptomic analysis of tissue section, 10x genomics xenium platform, 10x xenium v1 with segmentation kit, integrated 10x genomics workflow, resolution spatial gene expression profiling, 10x genomics workflow, detailed molecular characterization of tissue architecture, spatial gene expression profiling, spatial transcriptomic analysis, 10x xenium v1, tissue architecture, tissue section, segmentation kit, tissue processing, sen tmc, enabling detailed molecular characterization

Funders Acknowledgements:

National Institute on Aging (NIA) KAPP-Sen Tissue Mapping Collaborative

Grant ID: U54 AG075941

Disclaimer

DISCLAIMER – FOR INFORMATIONAL PURPOSES ONLY; USE AT YOUR OWN RISK

The protocol content here is for informational purposes only and does not constitute legal, medical, clinical, or safety advice, or otherwise; content added to [protocols.io](https://dx.doi.org/10.17504/protocols.io.x54v9o68zv3e/v1) is not peer reviewed and may not have undergone a formal approval of any kind. Information presented in this protocol should not substitute for independent professional judgment, advice, diagnosis, or treatment. Any action you take or refrain from taking using or relying upon the information presented here is strictly at your own risk. You agree that neither the Company nor any of the authors, contributors, administrators, or anyone else associated with [protocols.io](https://dx.doi.org/10.17504/protocols.io.x54v9o68zv3e/v1), can be held responsible for your use of the information contained in or linked to this protocol or any of our Sites/Apps and Services.

Abstract

This protocol describes the preparation, staining, and in situ spatial transcriptomic analysis of tissue sections using an integrated 10x Genomics workflow. Standardized procedures were followed for tissue processing, slide preparation, and staining to ensure consistency and quality. Modifications were applied where appropriate to optimize sample integrity. The 10x Genomics Xenium platform was employed for high-resolution spatial gene expression profiling, enabling detailed molecular characterization of tissue architecture.



Section preparation

- 1 Block QC and sectioning according to **CG000578 Rev E**.
- 2 Post sectioning, all slides are baked at 42°C for 3 hours.

Xenium In Situ

- 3 Deparaffinization and decrosslinking is done according to **CG000580 Rev E**.
Deparaffinization temperature and time is according to this 10x protocol, 60°C for 2 hours.



Note

We perform decrosslinking according to this [KB article](#), which recommends using 37°C for 30 minutes instead of the protocol's recommended 80°C for 30min.

- 4 The segmentation kit staining is performed according to **CG000749 Rev B**.
- 5 Xenium Analyzer is used according to **CG000584 Rev H**.