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CUMC-TMC- Central Nervous System Tissue Selection and Criteria

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Shaunice Grier^{1,2,3}

¹Columbia University; ²Columbia University Irving Medical Center; ³TMC

Cellular Senescence Net...



Shaunice Grier

Columbia University, Columbia University Irving Medical Cent...

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We use this protocol and it's working

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Abstract

Columbia University Senescence Tissue Mapping (CUSTMAP) center aims to establish how cellular senescence presents across the adult human lifespan (ages 20-80+ years old). In collaboration with the New York Brain Bank at Columbia University, and the University of Edinburgh's Sudden Death Brain Bank, we are collecting non-pathological tissue from 3 regions of the central nervous system (CNS): the dorsolateral prefrontal cortex (dlPFC), the hippocampus, and the lumbar spinal cord. Tissue quality is assessed via gross, macroscopic and histological examination. Upon successful evaluation of stringent quality control metrics, subject tissues are grouped into 3 age bins : young aged (20-40 years old), middle aged (41-60 years old), elderly aged (61-80+ years old). Quality assessed cohorts are assembled by age and sex for advanced downstream spatial genomic and proteomic processing. Age and sex balanced cohorts are leveraged and stratified across Spatial Transcriptomic, Multiomic and Proteomic workflows for integrative analysis.



Inclusion Criteria

- 1 Balanced composition of gray and white matter.
- 2 Minimal to no freeze fracture.
- 3 Clear morphology.
- 4 Presence of anatomical regions of interest.
- 5 Sufficient tissue size.

Exclusion Criteria

- 6 Apparent holes and disruption to micro tissue environment.
- 7 Insufficient tissue size.
- 8 Unclear morphology.
- 9 Tissue blocks containing multiple tissue chunks frozen together.
- 10 Anatomical regions of interest not present.