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Version 1

🌐 Human Kidney, Urinary Tract, and Lung Cell Type Mapping Pipeline for the Human Biomolecular Atlas Program (HuBMAP) V.1

DOI

<https://dx.doi.org/10.17504/protocols.io.bj9wkr7e>

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Protocol status: Working

We use this protocol and it's working

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Keywords: multitomic cell type organ maps within hubmap, resolved multitomic cell type organ map, lung cell type mapping, pipeline for the human biomolecular atlas program, multiplexed rna in situ imaging method, lung mapping center, chromatin maps to the tissue space, human biomolecular atlas program, spatial molecular map, chromatin map, molecular targets in the tissue section, multiplexed rna, subcellular resolution, scaffolds for computational registration, spatial mapping, associated transcriptome, spatial mapping of hundred, hubmap, computational registration, transcriptome, rna, human kidney, epigenome, single cell, molecular target, situ imaging method, sequencing, cell type, dissociated single cell, tissue section, tissue space

Abstract

This document provides an overview of the protocols used by the Human Kidney, Urinary Tract, and Lung Mapping Center (KULMAP) for generation of spatially resolved multitomic cell type organ maps within HuBMAP. This involves sequencing of the transcriptomes and epigenomes of dissociated single cells in a massively parallel manner, which will then inform on a highly multiplexed RNA *in situ* imaging method (DART-FISH) for spatial mapping of hundreds of molecular targets in the tissue sections, at a subcellular resolution. These spatial molecular maps will serve as scaffolds for computational registration of cell types and the associated transcriptome/chromatin maps to the tissue space.



- 1 Collection and processing of human tissues.
Bladder, Ureter, Kidney: dx.doi.org/10.17504/protocols.io.568g9hw
Lung airways and parenchyma: dx.doi.org/10.17504/protocols.io.bjuxknxn and
dx.doi.org/10.17504/protocols.io.bjtnknme
- 2 Isolation of single nuclei for omic assays.
Bladder, Ureter, Kidney: dx.doi.org/10.17504/protocols.io.ufketkw
Lung airways and parenchyma: dx.doi.org/10.17504/protocols.io.bh26j8he
- 3 Running of multimodal single cell/nucleus assays.
10X snRNA-seq: dx.doi.org/10.17504/protocols.io.86khzcw
SNARE-Seq2: dx.doi.org/10.17504/protocols.io.be5gjg3w
- 4 Spatial in situ mapping of multiomic profiles.
DART-FISH: Protocols coming soon.