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

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1 Works for me [dx.doi.org/10.17504/protocols.io.bj9wkr7e](https://doi.org/10.17504/protocols.io.bj9wkr7e)

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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 multomic 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.

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- 1 Collection and processing of human tissues.
Bladder, Ureter, Kidney: [dx.doi.org/10.17504/protocols.io.568g9hw](https://doi.org/10.17504/protocols.io.568g9hw)
Lung airways and parenchyma: [dx.doi.org/10.17504/protocols.io.bjuxknxn](https://doi.org/10.17504/protocols.io.bjuxknxn) and

- 2 Isolation of single nuclei for omic assays.
Bladder, Ureter, Kidney: [dx.doi.org/10.17504/protocols.io.ufketkw](https://doi.org/10.17504/protocols.io.ufketkw)
Lung airways and parenchyma: [dx.doi.org/10.17504/protocols.io.bh26j8he](https://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](https://doi.org/10.17504/protocols.io.86khzcw)
SNARE-Seq2: [dx.doi.org/10.17504/protocols.io.be5gjg3w](https://doi.org/10.17504/protocols.io.be5gjg3w)
- 4 Spatial in situ mapping of multiomic profiles.
DART-FISH: Protocols coming soon.