

# Resource Summary Report

Generated by [dkNET](#) on Sep 9, 2026

## Laser Microdissection (LMD) for Regional Proteomics

DOI:10.17504/protocols.io.brrqm55w

Type: Protocol

---

### Proper Citation

Samir Parikh, John Shapiro, Brad Rovin 2021. Laser Microdissection (LMD) for Regional Proteomics. protocols.io [dx.doi.org/10.17504/protocols.io.brrqm55w](https://dx.doi.org/10.17504/protocols.io.brrqm55w)

---

### Protocol Information

**URL:** <https://dx.doi.org/10.17504/protocols.io.brrqm55w>

**Authors:** Samir Parikh, John Shapiro, Brad Rovin

**Group:** KPMP

**Summary:** Recent advances in multi-scale interrogation of human tissue, including advanced imaging techniques and the powerful application of large dataset “omics”, have displayed significant promise toward identifying new and specific therapeutic targets, predicting disease progression, and individualizing treatment in participants with acute and chronic kidney disease. Our site, formed by the alliance of Indiana University and Ohio State University, will implement an unbiased tissue interrogation workflow for KPMP human kidney biopsies that integrates largescale 3D tissue imaging for quantitative supervised and unsupervised analysis/cytometry with sub-segmental “omics” data on the same kidney biopsy specimen. The sub-segmental “omics” pipeline will use fluorescence based Laser MicroDissection (LMD) to isolate specific nephron segments and interstitial/other targeted areas, for downstream analysis with transcriptomics and proteomics. The omics analysis will be eventually expanded to include bulk epigenetics. Acting harmoniously with other KPMP sites, our interrogation techniques are expected to facilitate back-mapping of key molecular pathways to the biopsy, which can subsequently identify foci of injury and/or regeneration that can undergo targeted sampling to generate further enriched omics. Therefore, in addition to a significant contribution to the human kidney atlas, our approach will complement other interrogation techniques within KPMP by providing tissue context and increasing spatial resolution for molecular signatures that arise in heterogeneous areas during kidney disease.

**Affiliations:** Department of Medicine, Division of Nephrology, The Ohio State University Wexner Medical Center, Columbus, Ohio, USA, Department of Medicine, Division of Nephrology, The Ohio State University Wexner Medical Center, Columbus, Ohio, USA, Department of Medicine, Division of Nephrology, The Ohio State University Wexner

Medical Center, Columbus, Ohio, USA

**Version:** 1

**Publication Date:** 2021

**Proper Citation:** Samir Parikh, John Shapiro, Brad Rovin 2021. Laser Microdissection (LMD) for Regional Proteomics. protocols.io dx.doi.org/10.17504/protocols.io.brrqm55w

**Record Creation Time:** 20210329T220533+0000

**Record Last Update:** 20210329T221011+0000

---

## Data and Source Information

**Source:**