



UNIVERSITY of CALIFORNIA, SAN DIEGO

SCHOOL OF MEDICINE

Division of Endocrinology and Metabolism

Postdoctoral position available: *in vivo* functional genomics of metabolic disease

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Associate Professor, Department of Medicine
School of Medicine, UCSD

Summary

The Majithia Lab at UC San Diego is seeking a highly motivated postdoctoral researcher (holds PhD with < 2 years of prior postdoc) with a strong background in mouse models of metabolism and genetics. This position will focus on the *in vivo* functional characterization of novel metabolic-disease genes using CRISPR-based genetic screens and mouse models. We will deploy barcoded, tissue-tropic AAV/CRISPR libraries to interrogate gene function directly in liver, adipose, muscle, and potentially other tissues, with deep molecular and physiological readouts. The ideal candidate brings technical skill in mouse genetics and handling, AAV injection, dissection, and tissue phenotyping (e.g., GTT/ITT, body composition, indirect calorimetry), and is excited to integrate tissue-level results with single-cell and bulk sequencing data.

The successful candidate will be appointed in the Department of Medicine at the UCSD School of Medicine and work in a state-of-the-art genomics laboratory at the center of the La Jolla campus with neighboring colleagues in cancer and cardiovascular genomics, as well as systems biology, neurodevelopmental genetics, and metabolomics.

Responsibilities

- Design and execute *in vivo* pooled/arrayed CRISPR screens using barcoded AAV (or other delivery) to perturb candidate genes in metabolic tissues.
- Perform mouse handling and procedures including tail-vein/retro-orbital/IP/SC injections; troubleshoot tissue-targeted delivery; follow IACUC protocols for anesthesia/analgesia and humane endpoints.
- Conduct metabolic phenotyping: GTT/ITT, body-composition (e.g., EchoMRI/DEXA if available), fasting/refeeding studies, indirect calorimetry, serum chemistry; optionally glucose-clamp studies with training.
- Dissect, process, and phenotype tissues (e.g., liver lobes, adipose depots, skeletal muscle, islets) for histology (H&E, Oil Red O, IF), qPCR/ELISA, flow cytometry/FACS (e.g., SVF from adipose), and nuclei isolation for snRNA-seq/snATAC-seq.
- Coordinate AAV vector design, packaging, titering, and tropism QC; maintain detailed records of viral lots and barcoded libraries.
- Analyze NGS/barcode data with the team; integrate single-cell and bulk omics to prioritize hits; validate with orthogonal assays (e.g., CRISPRi/a, base-editing).

- Manage animal colonies (breeding, genotyping, record-keeping) and collaborate with vivarium/metabolic core facilities; contribute to an inclusive, open-science culture.
- Lead manuscripts and conference presentations; contribute to fellowship/career-development applications.

Requirements

- PhD (or MD/PhD) in Genetics, Molecular/Cell Biology, Physiology, Bioengineering, or related field.
- Demonstrated proficiency with mouse handling and *in vivo* procedures (e.g., injections, tissue harvests) and with AAV-based or comparable *in vivo* gene-delivery systems.
- Hands-on experience in metabolic phenotyping (at least GTT/ITT) and tissue-level assays (histology/IHC, qPCR/ELISA, or flow cytometry).
- Strong publication record; excellent communication and teamwork.

Preferred Qualifications

- Prior work designing or executing *in vivo* CRISPR screens (pooled or arrayed), including barcoded AAV libraries and guide design/validation.
- Experience with indirect calorimetry, hyperinsulinemic–euglycemic clamps, telemetry, or metabolic cage studies; advanced imaging of tissues (confocal/IF).
- Familiarity with tissue dissociation workflows, FACS of primary cells, and nuclei isolation for single-cell/single-nucleus profiling.
- Comfort handling NGS datasets in R/Python to triage screening hits.
- Experience maintaining transgenic/Cre-driver lines and coordinating with core facilities.

To Apply

Send a CV, at least two references, and a one-page statement of research interests and career goals to Amit Majithia, MD at majithialab@health.ucsd.edu.