Specialist - Mass Spectrometry-Based Metabolomics and Screening - Molecular Therapeutics Initiative - Department of Molecular and Cell Biology
University of California Berkeley

Job Title	Specialist - Mass Spectrometry-Based Metabolomics and Screening - Molecular Therapeutics Initiative - Department of Molecular and Cell Biology
Department	Molecular and Cell Biology
Institution	University of California Berkeley Berkeley, California
Date Posted	Nov. 1, 2024
Application Deadline	11/30/2024
Position Start Date	Available immediately
Job Categories	Research Scientist/Associate
Academic Field(s)	Chemistry - Biochemistry Chemistry - Analytical Biology - Cell Biology Biology - Biochemistry
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Job Description

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Position overview

Position title: Specialist
Salary range: The UC academic salary scales set the minimum pay determined by rank and step at appointment. See the following table(s) for the current salary scale(s) for this position: https://www.ucop.edu/academic-personnel-programs/_files/2024-25/july-2024-scales/t24-b.pdf. The current base salary range for this position is $90,000-$124,000. "Off-scale" salaries, which yield compensation that is higher than the published system-wide salary at the designated rank and step, are offered when necessary to meet competitive conditions.

Percent time: 100%

Anticipated start: Fall/Winter 2024

Position duration: One year with the possibility of extension based on performance and availability of funding.

Application Window
Open date: October 31, 2024

Next review date: Saturday, Nov 30, 2024 at 11:59pm (Pacific Time)
Apply by this date to ensure full consideration by the committee.

Final date: Saturday, Nov 30, 2024 at 11:59pm (Pacific Time)
Applications will continue to be accepted until this date.

Position description

The department of Molecular and Cell Biology at the University of California, Berkeley seeks applications for a Specialist in the Molecular Therapeutics Initiative, in the area of mass spectrometry, metabolomics and high throughput screening and assay development.

The UC Berkeley Molecular Therapeutics Initiative (MTI), founded in 2023, pursues research that provides an understanding of biochemical and cellular mechanisms that are affected in disease and can be exploited for the development of new therapeutic modalities.

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The MTI is comprised of a collaborative, interdisciplinary community of UC Berkeley labs, external academic institutes, biopharma companies and venture capital partners that empowers rapid, iterative formulation and testing of therapeutic hypotheses. Initial research focus is on the interplay between metabolites and proteins to reveal new biological pathways that can modulate "undruggable" proteins, informing next-generation, induced proximity modalities in areas of significant unmet need such as rare diseases, neurodegeneration and cancer.

The position integrates with existing projects within MTI to 1- decode metabolic features of neurodegenerative conditions and 2- utilize natural metabolic ligands as starting points for drug discovery. The first category involves metabolomic analysis (targeted and untargeted) of various cell models of neurological diseases, including primary and iPSC-derived, determined under various stress conditions. The second category includes metabolite-binding assays on recombinant proteins, followed by structural and functional mapping, with the goal of complementing and/or informing drug discovery efforts with synthetic chemical libraries. The use of high-throughput mass spectrometry-based metabolomic analysis and the associated methods and analytical tool developments are key to both types of projects.

The position also entails a role in the UC Berkeley Drug Discovery Center within MTI, using state-of-the art automated liquid handling to develop assays and execute high throughput screen to identify new therapeutic starting points and tool compounds. This position will report to Julia Schaletzky, Executive Director of the Molecular Therapeutics Initiative & Adj. Professor of Molecular Therapeutics. Professor Roberto Zoncu will serve as the academic mentor.

The Specialist will work on a Thermo Scientific Orbitrap Exploris 240, coupled with a Vanquish UHPLC system, and will demonstrate proficiency in a variety of MS-based applications for the analysis of small metabolites, with an emphasis on metabolite identification and measurement of metabolite-protein interaction. The Specialist is expected to demonstrate strong analytical instrumentation skills including operation, maintenance, and troubleshooting of mass spectrometers and UHPLC systems, as well as automated liquid handlers and other high-throughput screening equipment. The position also includes screening assay development and execution on fully and semi-automated robotic systems, including preparation of reagents, quality control, supervision of workflows and preparation of assay reports and visualization, as well as data analysis, troubleshooting and maintenance of equipment. Over time there is a possibility to contribute to computational and data science projects and grow skills in this area.

Duties include:

- Conduct Metabolomics Research: Utilize advanced metabolomics techniques for research and analysis, including the development and optimization of methods for metabolite extraction,

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chromatography, and mass spectrometry.
- Sample Preparation: Prepare analytical samples using techniques such as liquid-liquid extraction and solid-phase extraction (SPE) to ensure accuracy and reliability in metabolomics studies.
- Method Development and Data Interpretation: Develop and refine metabolomics methods, interpret mass spectrometry data, and identify unknown peaks to advance research objectives.
- Operate High-Resolution Mass Spectrometry Equipment: Use high-resolution mass spectrometry machines, particularly on the Thermo Scientific Orbitrap Exploris 240 Mass Spectrometer, coupled with a Vanquish UHPLC, for the accurate quantification of metabolites.
- Develop and miniaturize enzymatic and cell-based assays and optimize for high-throughput screening; conduct HTS campaign and follow-up, including sample management, QC and troubleshooting
- Data Analysis: Perform statistical analyses, multivariate data analysis, and pathway analysis using software tools like R, Python or Spotfire to derive meaningful insights from experimental data.
- Project Management: Organize, prioritize, and manage multiple research tasks and projects simultaneously while maintaining attention to detail and meeting deadlines.
- Collaboration and Communication: Work effectively within a multidisciplinary team, communicate complex technical information to both experts and non-experts, and contribute to a collaborative research environment.
- Research Contributions: Contribute to the advancement of research projects through innovative approaches and by disseminating findings via publications, presentations, and other research outcomes.
- Reporting: interact frequently with supervisor and collaborators to decide on strategies, priorities and day-to-day running of the projects.
- Other tasks as assigned by supervisor.

This position provides full benefits.

Contract: https://uaw5810.org/ar-contract-2022/

Qualifications
Basic qualifications (required at time of application)
Bachelor's Degree (or equivalent international degree)

Additional qualifications (required at time of start)
10 or more years of research experience or an advanced degree (or equivalent international degree)

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Preferred qualifications

- PhD (or equivalent international degree) in a relevant field (e.g., biochemistry, analytical chemistry, metabolomics, or related disciplines)
- Background in metabolomics techniques, laboratory experience, and data analysis knowledge
- 3+ years of hands-on experience in analytical sample preparation (liquid-liquid extraction, SPE)
- Experience in metabolomics method development and mass spectrometry data interpretation (e.g. identification and follow-up of unknown peaks)
- Familiarity with high-resolution mass spec machines and techniques (e.g. Thermo platform)
- Ability to develop custom metabolite extraction methods, chromatography conditions, etc. for relative and absolute quantification of metabolites
- Familiarity with any data analysis software such as R, python or spotfire to perform statistical analyses, multivariate data analysis, and pathway analysis
- Familiar with Laboratory inventory management (LIMS) systems a plus
- Excellent organizational skills, attention to detail, and the ability to manage and prioritize multiple tasks effectively
- Strong communication and interpersonal skills, enabling effective collaboration within a multidisciplinary team and the ability to convey complex technical information to non-experts
- Proven track record of contributing to research projects, evidenced by publications (preferable), presentations, or project outcomes
- Excellent oral and written communication skills are essential
- Self-starter and able to work both independently and as part of a multidisciplinary team
- The selected candidate must have expertise as a mass spectrometrist in the field of small metabolite discovery, identification and measurement
- Experience in computational methods for metabolite identification and measurements, as well as relevant computational platforms.

Application Requirements

Document requirements

- Curriculum Vitae - Your most recently updated C.V.
  CV must clearly list current and/or pending qualifications (e.g. board eligibility/certification, medical licensure, etc.
- Cover Letter
- Statement of Research (Optional)
- Statement on Contributions to Diversity, Equity, Inclusion, and Belonging - Statement on your

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contributions to diversity, equity, inclusion, and belonging in research, teaching, and service, including information about your record of activities to date, and plans for contributing if hired at UC Berkeley. More Information and guidelines.
(Optional)

Reference requirements

- 3-5 required (contact information only)

Apply link: https://aprecruit.berkeley.edu/JPF04656

Help contact: jschaletzky@berkeley.edu

About UC Berkeley

UC Berkeley is committed to diversity, equity, inclusion, and belonging. The excellence of the institution requires an environment in which the diverse community of faculty, students, and staff are welcome and included. Successful candidates will demonstrate knowledge and skill related to ensuring equity and inclusion in the activities of their academic position (e.g., teaching, research, and service, as applicable).

The University of California, Berkeley is an Equal Opportunity/Affirmative Action Employer. All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, disability, age, or protected veteran status.

Please refer to the University of California's Affirmative Action Policy and the University of California's Anti-Discrimination Policy.

In searches when letters of reference are required all letters will be treated as confidential per University of California policy and California state law. Please refer potential referees, including when letters are provided via a third party (i.e., dossier service or career center), to the UC Berkeley statement of confidentiality prior to submitting their letter.

As a University employee, you will be required to comply with all applicable University policies and/or collective bargaining agreements, as may be amended from time to time. Federal, state, or local government directives may impose additional requirements.

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Berkeley, CA

To apply, visit https://aprecruit.berkeley.edu/JPF04656

Contact Information

Please reference Academickeys in your cover letter when applying for or inquiring about this job announcement.

Contact

N/A
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