Research Associate I - Molecular/Cellular Biology

Job Description
The Zhang Lab (zhanglab.bio) develops novel tools for reading and writing biology and applies these tools to study diseases including neurological disorders and cancer. We are looking to recruit a sharp, motivated research associate to work with a mentor on a project developing a novel form of oligonucleotide therapeutic.

The candidate should have a B.S. degree in the life sciences with at least 1 year of relevant undergraduate research experience, possessing a working understanding of molecular biology principles and research techniques. The candidate will be primarily involved with learning and applying molecular biology, cell biology, optical, computational, biochemical, and genetic techniques in the context of a larger project to engineer base editing enzymes. Experience with cell culture, such as sterile technique, cell maintenance, cell transfection, and gDNA and/or RNA preparation is beneficial but not necessary. The ideal candidate will be a quick learner and hard worker, detail-oriented, adaptable, and intellectually curious. This position offers an opportunity to learn a variety of cutting-edge methods and gain valuable experience in a fast-paced, result-driven, and collaborative lab environment with access to state-of-the-art research facilities.

The Zhang lab is a member of the Broad Institute and McGovern Institute at MIT, and a part of the greater Boston life-sciences community including MIT and Harvard, with support from NIH, HHMI, and various foundations and philanthropies. The Broad Institute of MIT and Harvard offers an outstanding place to work. The workplace culture is dynamic, progressive, and supports a healthy work-life balance. To support this mission, we strive for a workplace culture that supports diversity, intellectual curiosity, flexibility, and integrity. Details on our benefits package can be found here: https://www.broadinstitute.org/benefits/benefits-working-broad

Project Summary
Adenosine deaminase acting on RNA (ADAR) is a protein that catalyzes conversion of adenosine to inosine in double-stranded RNA. In 2017, our lab invented a targeted RNA base editing technology by fusing ADAR to the RNA targeting protein Cas13 and termed this system REPAIR (RNA editing for programmable A-to-I replacement). RNA editing presents a technique for editing the genetic code in cell types in which it is traditionally difficult to perform genome editing (i.e. post-mitotic cells such as neurons), and to induce temporary edits rather than permanent ones. REPAIR is efficient at targeted editing, but also performs a large number of off-target edits throughout the transcriptome. We are applying both rational design and directed evolution to improve the editing specificity of REPAIR, with the ultimate goal of applying Cas13-based RNA editing as a therapeutic tool.

Characteristic Duties
- Perform molecular cloning (DNA purification, digestion, amplification, ligation, transformation, electrophoresis, quantification)
- Learn additional techniques as required by the project, such as next-generation
sequencing approaches, adeno-associated virus production, fluorescence microscopy, and flow cytometry

- Present experimental results, both in written and oral formats, with an emphasis on clarity
- Keep up with relevant literature and discuss science with others in the group, both in formal lab meetings and informal conversations

**Requirements**

- Bachelor’s degree in life science-related field
- At least 1 year of experience in a research laboratory (during undergraduate education is ok) focusing on molecular/cellular biology work
- General curiosity about science and desire to learn new skills
- Exceptional organizational and critical thinking skills, lab notebook practices and attention to detail
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Job Description
The Zhang Lab at the Broad Institute of MIT and Harvard is looking for a motivated Research Associate to work in a dynamic translational research team focused on characterizing novel bacterial proteins and harnessing them for human genome editing. The candidate should possess a BS degree in molecular/cellular biology, biochemistry, or a related field, with at least 1 year of relevant research experience.

The candidate will be primarily involved with applying molecular biology, genetic techniques, and cell culture in the context of a larger project. Any experience with protein biochemistry, deep sequencing, or computational biology will be considered a plus. The candidate will also contribute to various sub-projects to support the overall research goals of the highly creative and dynamic research team of scientists, engineers, and life science entrepreneurs in the Zhang lab at the Broad Institute.

Characteristic Duties
• Perform molecular biology (DNA purification, digestion, amplification, ligation)
• Purification and biochemistry of novel bacterial proteins (FPLC, in vitro reactions, electrophoresis)
• Other techniques may include deep sequencing, cell culture work, and flow cytometry.
• With supervisor, will help plan, execute, and analyze experiments to address specific questions defined by the project.
• Generate oral and written reports on performed experiments. Attends team meetings for experimental planning and present the results in project meetings. Consults with literature, supervisor and other scientific staff as needed.

Requirements
• Bachelor’s degree in molecular/cellular biology, biochemistry, or related field required.
• Must possess at least 1 year of experience in a research laboratory with experience in molecular/cellular biology work.
• Highly motivated individual who works well with others
• Excellent communication skills and the ability to work in a fast-paced environment.
• Exceptional organizational and critical thinking skills, lab notebook practices and attention to detail are essential.