



BOSTON COLLEGE

Department of Biology

POSTDOC POSITION

Project Name: Viral Insulin/IGF-1 like peptides and IGF1R inhibition.

We are currently seeking a highly motivated postdoctoral fellow for a translational research project that focuses on studying the role of viral insulins in the insulin/IGF-1 signaling system, growth, and cancer progression. The Altindis Lab at the Boston College Biology Department received its first NIH R01 grant and the postdoc will be supported with this mechanism.

We recently made a surprising discovery, demonstrating that viruses encode insulin/IGF-1-like sequences known as viral insulin/IGF-1-like peptides (VILPs). While most VILPs act as natural agonists of human receptors, our research has revealed that two VILPs function as natural antagonists of the IGF-1 receptor (IGF1R). The primary objective of this project is to elucidate the mechanism of action of VILPs that inhibit IGF1R. Our ultimate goal is to translate these findings into breast cancer and prostate cancer research. The position is available. Applications will be considered on a rolling basis until the positions are filled, offering a salary higher than the NIH scale (\$65,000 starting from June 2024 for first-year postdocs), along with comprehensive employee benefits. For more information, visit <https://altindislab.com/>.

Requirements

- Applicant recently awarded a Ph.D. or equivalent doctorate (e.g., Sc.D., M.D.) in Cell Biology, Cancer Biology, Metabolism, Physiology or a related field.
- Experience with basic molecular biology methods including, isolating DNA, RNA and protein from tissues and cells, PCR, qPCR and Western Blot, microscopy.
- Experience working with mice: intraperitoneal injections (sc. i.p, vena cava) and dissection of the organs. This is essential.
- Experience working with cancer cell lines and xenograft (CDX) models
- Experience of mammalian cell culture of primary cells and cell lines and transfection
- Experience with AAV-8 vectors and transduction.
- Experience with plasmid design and transfection.
- Experience with basic insulin/IGF action experiments such as insulin/IGF-1 signaling and glucose uptake, cell proliferation is a big plus.
- Demonstrated scientific excellence; evidenced by publication track record as well as track record of presenting at national and international meetings.
- The ability to perform creative and independent research
- Excellent oral and written communication skills in English.
- Good communication and interpersonal skills.
- Experience with high-throughput genomics, RNAseq and next-generation sequencing preparation and analysis is a plus

Boston College
Department of Biology

Job Duties

- Works under the supervision of Dr. Altindis for hypothesis development and experimental design.
- Performs bench work using various molecular biology techniques and taking the major responsibility in one of the major research projects in the lab.
- Breeding & keeping mouse colonies used in this project (B6 and BGH mice)
- Running xenograft experiments
- Collaborates with other members in the lab for various research projects.
- Participates in data processing, discussion, analysis and reporting as well as manuscript preparation and conference presentations.
- Helps the PI and team in managing the lab.
- Mentors junior lab members.
- Applies for independent funding opportunities and awards during his/her/their stay in the lab and support the PI's grant applications.
- Prepare manuscripts and publish the results of his/her/their research during the period of the appointment
- Contributes to the lab's continued efforts to create an inclusive, safe and diverse lab culture.
- The appointment is typically viewed as preparatory for a full-time academic and/or research position.

The application should be addressed to altindis@bc.edu and contain

1. Letter of motivation with a short description of your previous research and why you consider you are a good match for the position.
2. Curriculum vitae, including a description of relevant skills and experiences, as well as a full publication list.
3. Names, e-mail addresses and telephone numbers to 3 reference persons.

Related References

- A Viral Insulin-like Peptide Inhibits IGF-1 Receptor Phosphorylation and Regulates IGF1R Gene Expression. *Molecular Metabolism*. 2024 Feb Volume 80, 101863
- Interaction of a viral insulin-like peptide with the IGF-1 receptor produces a natural antagonist. *Nature Communications*. 2022 Nov 5;13(1):6700.
- A Viral Insulin-Like Peptide is a Natural Competitive Antagonist of the Human IGF-1 Receptor. *Molecular Metabolism*. 2021 Aug 13;101316.
- Characterization of Viral Insulins Reveals White Adipose Tissue Specific Effects in Mice. *Molecular Metabolism*. 2020 Nov 18;101121
- Viral insulin-like peptides activate human insulin and IGF-1 receptor signaling: A paradigm shift for host-microbe interactions. *PNAS*, 2018 Mar 6;115 (10):2461-2466.
- Viral Hormones: Expanding Dimensions in Endocrinology. *Endocrinology*, 2019, Volume 160, Issue 9, September, 2165–2179