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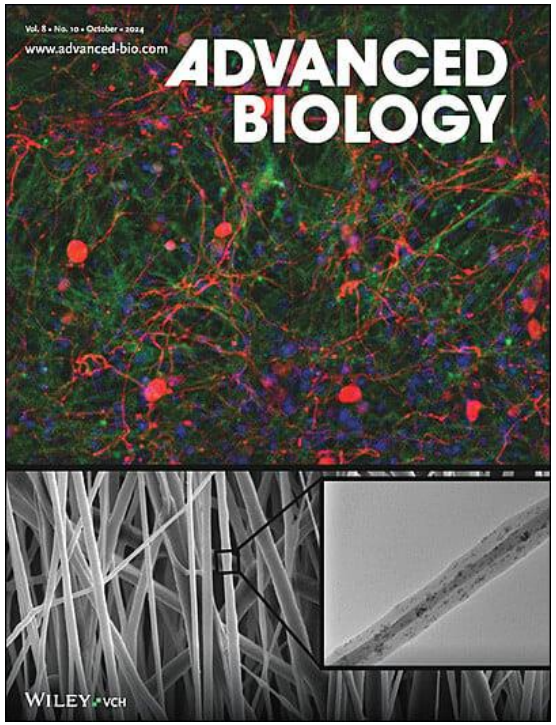
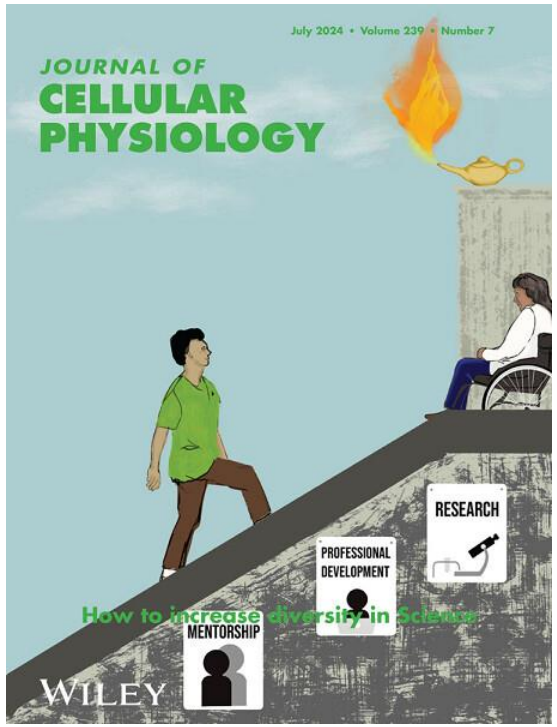
Demystifying the Publication Process and Tips for Early Career Researchers

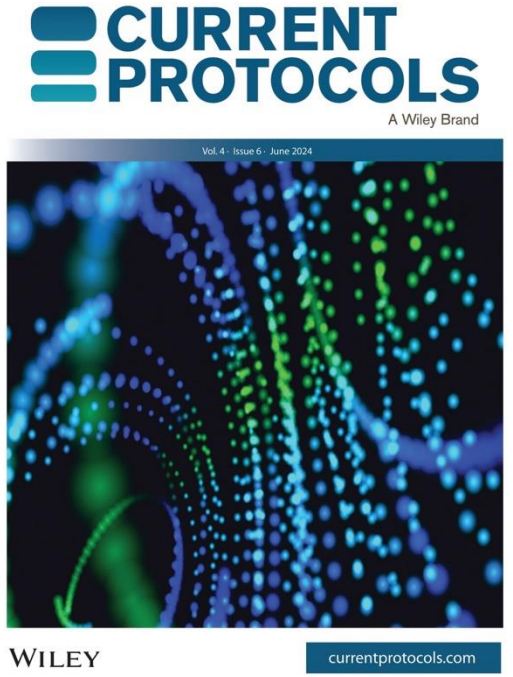
Alexander Hutchison, PhD, Editor-in-Chief,
Current Protocols, Wiley

My time at Wiley



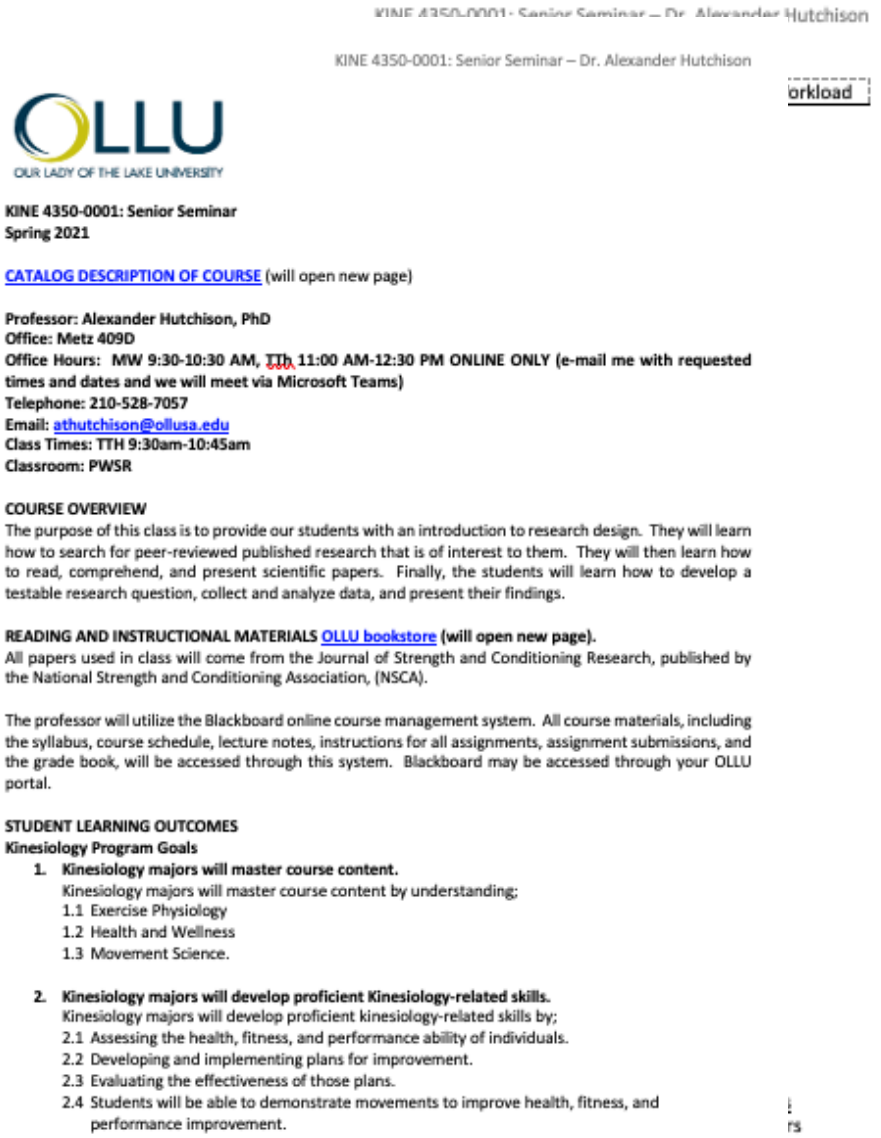
Aging Cell





My background

- High School math & science teacher for 7 years.
- College professor for 12 years.
- Good term paper like good submission.
- Starts by reading the instructions.



KINE 4350-0001: Senior Seminar – Dr. Alexander Hutchison

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orkload

OLLU
OUR LADY OF THE LAKE UNIVERSITY

KINE 4350-0001: Senior Seminar
Spring 2021

CATALOG DESCRIPTION OF COURSE (will open new page)

Professor: Alexander Hutchison, PhD
Office: Metz 409D
Office Hours: MW 9:30-10:30 AM, TTh 11:00 AM-12:30 PM ONLINE ONLY (e-mail me with requested times and dates and we will meet via Microsoft Teams)
Telephone: 210-528-7057
Email: athutchison@ollusa.edu
Class Times: TTH 9:30am-10:45am
Classroom: PWSR

COURSE OVERVIEW
The purpose of this class is to provide our students with an introduction to research design. They will learn how to search for peer-reviewed published research that is of interest to them. They will then learn how to read, comprehend, and present scientific papers. Finally, the students will learn how to develop a testable research question, collect and analyze data, and present their findings.

READING AND INSTRUCTIONAL MATERIALS OLLU bookstore (will open new page).
All papers used in class will come from the Journal of Strength and Conditioning Research, published by the National Strength and Conditioning Association, (NSCA).

The professor will utilize the Blackboard online course management system. All course materials, including the syllabus, course schedule, lecture notes, instructions for all assignments, assignment submissions, and the grade book, will be accessed through this system. Blackboard may be accessed through your OLLU portal.

STUDENT LEARNING OUTCOMES
Kinesiology Program Goals

1. **Kinesiology majors will master course content.**
   Kinesiology majors will master course content by understanding;
   1.1 Exercise Physiology
   1.2 Health and Wellness
   1.3 Movement Science.

2. **Kinesiology majors will develop proficient Kinesiology-related skills.**
   Kinesiology majors will develop proficient kinesiology-related skills by;
   2.1 Assessing the health, fitness, and performance ability of individuals.
   2.2 Developing and implementing plans for improvement.
   2.3 Evaluating the effectiveness of those plans.
   2.4 Students will be able to demonstrate movements to improve health, fitness, and performance improvement.

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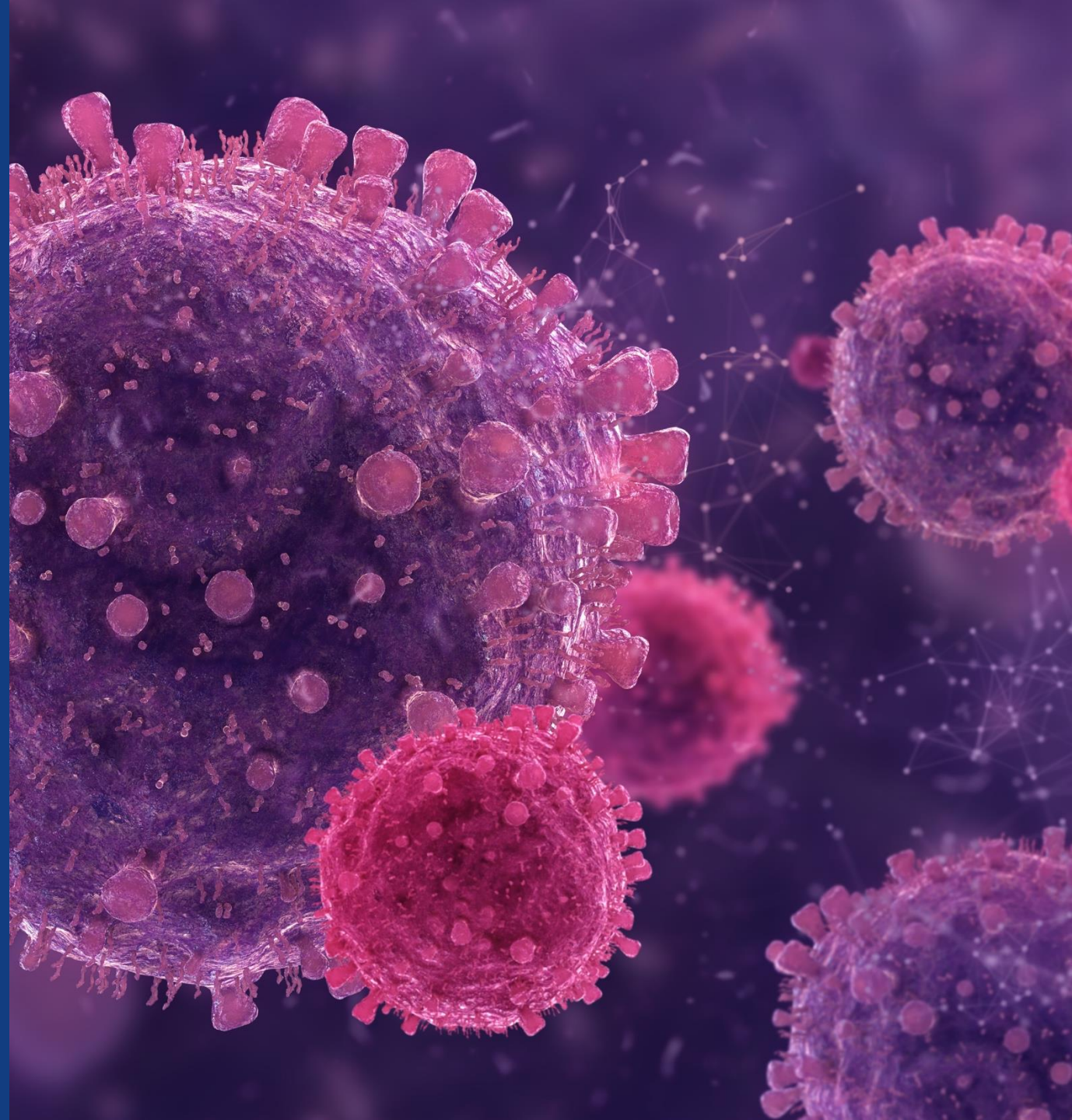
Journal of Cellular Physiology



Aims & Scope (What we want)

The ***Journal of Cellular Physiology*** publishes high-quality original research articles and reviews in areas of eukaryotic cell biology and physiology, focusing on those articles that adopt a molecular mechanistic approach to investigate cell structure and function. There is appreciation for the application of cellular, biochemical, molecular and in vivo genetic approaches, as well as the power of genomics, proteomics, bioinformatics, and systems biology. Research articles must have a clear hypothesis and present novel and significant findings as well as perspectives on topics of cellular science, including molecular biology, biochemistry, pathobiochemistry, and molecular medicine.

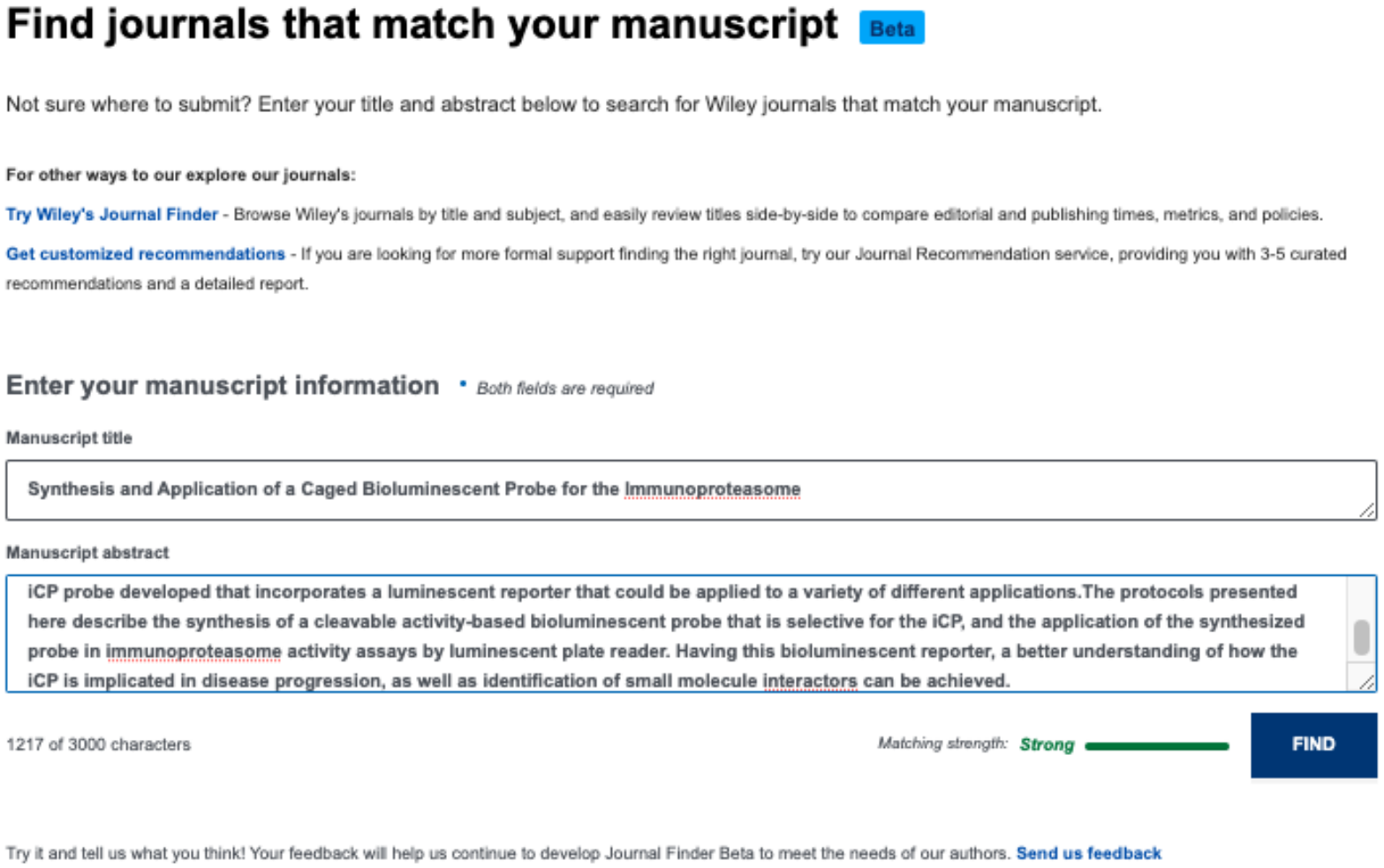
Aims & Scope (What we don't want)

Merely descriptive manuscripts that do not go beyond correlations are not the focus of the Journal. Examples include associations of sequencing and omics data, RNA data (mRNA, non-coding RNA, microRNA), in silico analysis, and mere tests of compounds (including natural extracts) in cellular and animal models without mechanistic insights. Studies that are primarily bioinformatic in nature or focus on identifying novel biomarkers are considered outside of the scope of the Journal.

2023 Submissions

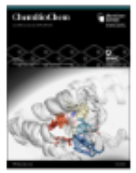
Total Submissions	Bioinformatics	Long non-coding RNA	Micro RNA	In silico	Nutraceuticals
2370					

Wiley Journal Finder



https://journalfinder.wiley.com/search?type=match

Wiley Journal Finder (Results)



ChemBioChem
Chemistry Europe

Editors
Ruben Ragg; Editorial Board Chairs: Gilles Gasser, Zijian Guo, Jennifer M. Heemstra, Olalla Vazquez

Impact Factor **3.2**
Open access **Optional**
Relevance

SUBMIT TO THIS JOURNAL

Angewandte Chemie International Edition
Gesellschaft Deutscher Chemiker

Editors
Theresa Kueckmann, Frank Maass, Xin Su (??), Suzanne Tobey, Nathalie Weickgenannt; Scientific Advisory Committee Chair: Helma Wennemers International Advisory Board Chair: Annette G. Beck-Sickinger

Impact Factor **16.6**
Open access **Optional**
Relevance

SUBMIT TO THIS JOURNAL

Israel Journal of Chemistry
Israel Chemical Society

Editors
Ehud Keinan

Impact Factor **3.2**
Open access **Optional**
Relevance

SUBMIT TO THIS JOURNAL

Journal of Cellular and Molecular Medicine
The Foundation for Cellular and Molecular Medicine

Editors
Stefan N. Constantinescu

Impact Factor **5.3**
Open access **Yes**
Relevance

SUBMIT TO THIS JOURNAL

European Journal of Immunology
European Federation of Immunological Societies

Editors
Chiara Romagnani (Chair of the Executive Committee)

Impact Factor **5.4**
Open access **Optional**
Relevance

SUBMIT TO THIS JOURNAL

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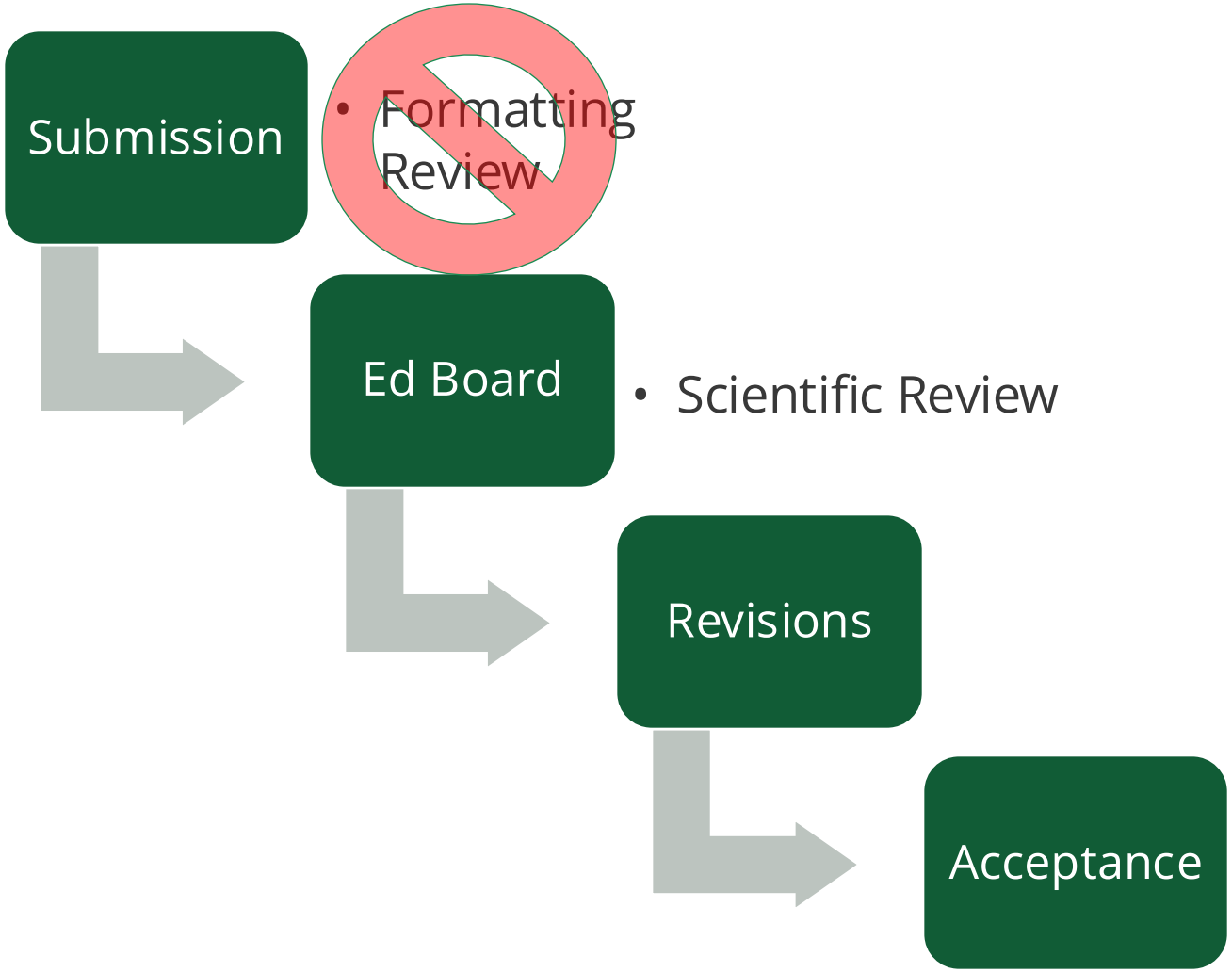
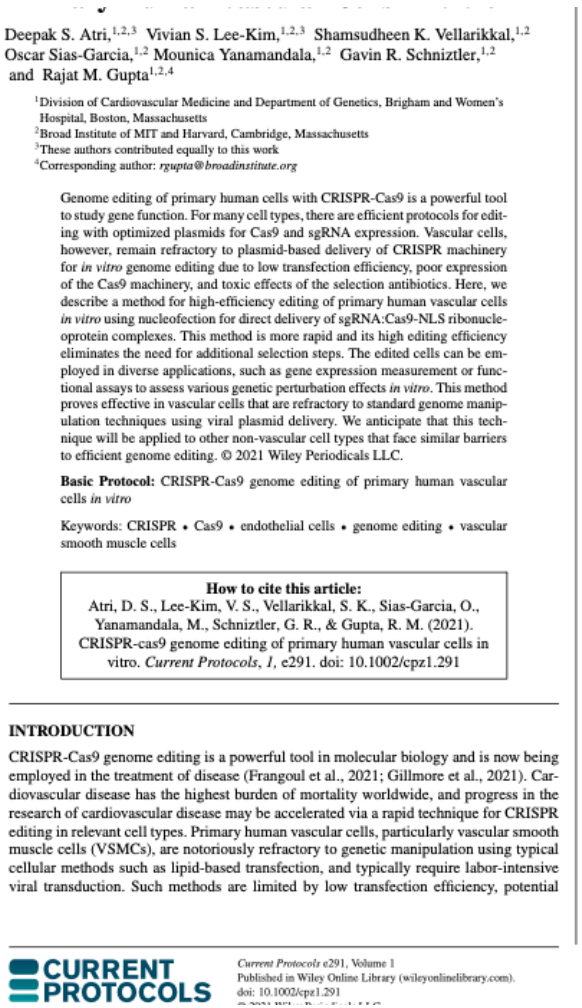
Current Protocols

Current Protocols Workflow



Templates



Deepak S. Atri,[1,2,3] Vivian S. Lee-Kim,[1,2,3] Shamsudheen K. Vellarikkal,[1,2] Oscar Sias-Garcia,[1,2] Mounica Yanamandala,[1,2] Gavin R. Schniztler,[1,2] and Rajat M. Gupta[1,2,4]

[1]Division of Cardiovascular Medicine and Department of Genetics, Brigham and Women's Hospital, Boston, Massachusetts
[2]Broad Institute of MIT and Harvard, Cambridge, Massachusetts
[3]These authors contributed equally to this work
[4]Corresponding author: *rgupta@broadinstitute.org*

Genome editing of primary human cells with CRISPR-Cas9 is a powerful tool to study gene function. For many cell types, there are efficient protocols for editing with optimized plasmids for Cas9 and sgRNA expression. Vascular cells, however, remain refractory to plasmid-based delivery of CRISPR machinery for *in vitro* genome editing due to low transfection efficiency, poor expression of the Cas9 machinery, and toxic effects of the selection antibiotics. Here, we describe a method for high-efficiency editing of primary human vascular cells *in vitro* using nucleofection for direct delivery of sgRNA:Cas9-NLS ribonucleoprotein complexes. This method is more rapid and its high editing efficiency eliminates the need for additional selection steps. The edited cells can be employed in diverse applications, such as gene expression measurement or functional assays to assess various genetic perturbation effects *in vitro*. This method proves effective in vascular cells that are refractory to standard genome manipulation techniques using viral plasmid delivery. We anticipate that this technique will be applied to other non-vascular cell types that face similar barriers to efficient genome editing. © 2021 Wiley Periodicals LLC.

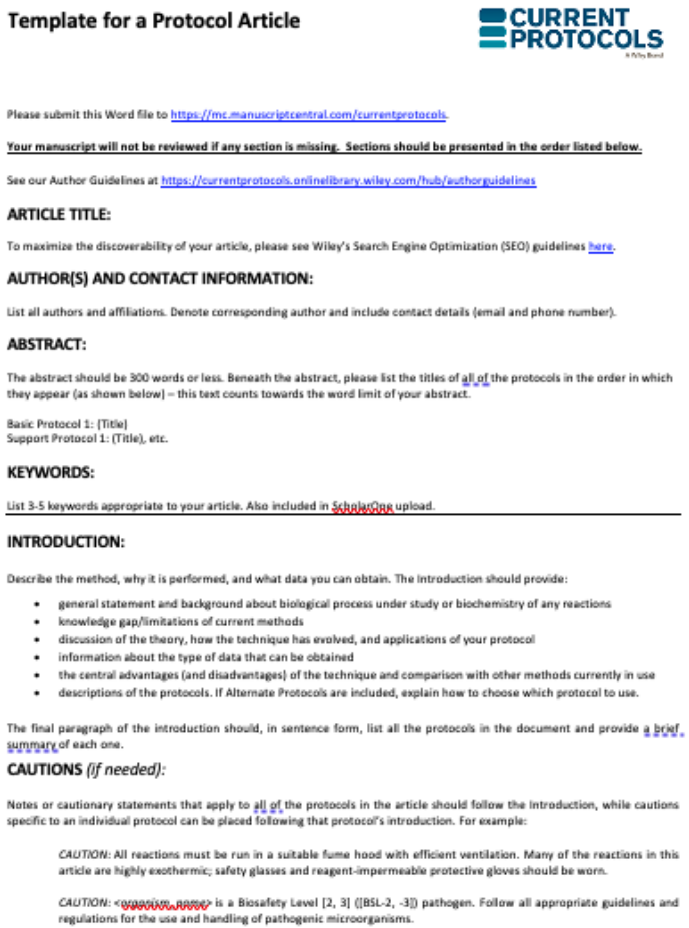
Basic Protocol: CRISPR-Cas9 genome editing of primary human vascular cells *in vitro*

Keywords: CRISPR • Cas9 • endothelial cells • genome editing • vascular smooth muscle cells

How to cite this article:
Atri, D. S., Lee-Kim, V. S., Vellarikkal, S. K., Sias-Garcia, O., Yanamandala, M., Schniztler, G. R., & Gupta, R. M. (2021). CRISPR-cas9 genome editing of primary human vascular cells in vitro. *Current Protocols*, *1*, e291. doi: 10.1002/cpz1.291

INTRODUCTION

CRISPR-Cas9 genome editing is a powerful tool in molecular biology and is now being employed in the treatment of disease (Frangoul et al., 2021; Gillmore et al., 2021). Cardiovascular disease has the highest burden of mortality worldwide, and progress in the research of cardiovascular disease may be accelerated via a rapid technique for CRISPR editing in relevant cell types. Primary human vascular cells, particularly vascular smooth muscle cells (VSMCs), are notoriously refractory to genetic manipulation using typical cellular methods such as lipid-based transfection, and typically require labor-intensive viral transduction. Such methods are limited by low transfection efficiency, potential



Template for a Protocol Article

CURRENT PROTOCOLS

Please submit this Word file to https://mc.manuscriptcentral.com/currentprotocols.

Your manuscript will not be reviewed if any section is missing. Sections should be presented in the order listed below.

See our Author Guidelines at https://currentprotocols.onlinelibrary.wiley.com/hub/authorguidelines

ARTICLE TITLE:

To maximize the discoverability of your article, please see Wiley's Search Engine Optimization (SEO) guidelines here.

AUTHOR(S) AND CONTACT INFORMATION:

List all authors and affiliations. Denote corresponding author and include contact details (email and phone number).

ABSTRACT:

The abstract should be 300 words or less. Beneath the abstract, please list the titles of all of the protocols in the order in which they appear (as shown below) – this text counts towards the word limit of your abstract.

Basic Protocol 1: (Title)
Support Protocol 1: (Title), etc.

KEYWORDS:

List 3-5 keywords appropriate to your article. Also included in ScholarOne upload.

INTRODUCTION:

Describe the method, why it is performed, and what data you can obtain. The Introduction should provide:

- general statement and background about biological process under study or biochemistry of any reactions
- knowledge gap/limitations of current methods
- discussion of the theory, how the technique has evolved, and applications of your protocol
- information about the type of data that can be obtained
- the central advantages (and disadvantages) of the technique and comparison with other methods currently in use
- descriptions of the protocols. If Alternate Protocols are included, explain how to choose which protocol to use.

The final paragraph of the introduction should, in sentence form, list all the protocols in the document and provide a brief summary of each one.

CAUTIONS *(if needed)*:

Notes or cautionary statements that apply to all of the protocols in the article should follow the Introduction, while cautions specific to an individual protocol can be placed following that protocol's introduction. For example:

CAUTION: All reactions must be run in a suitable fume hood with efficient ventilation. Many of the reactions in this article are highly exothermic; safety glasses and reagent-impermeable protective gloves should be worn.

CAUTION: <organism name> is a Biosafety Level [2, 3] ([BSL-2, -3]) pathogen. Follow all appropriate guidelines and regulations for the use and handling of pathogenic microorganisms.

Multiplexed Single-Nucleus RNA Sequencing Using Lipid-Oligo Barcodes

Qi Zhang,[1,4] Seong Won Kim,[1,4,5] Joshua M. Gorham,[1] Daniel M. DeLaughter,[1] Tarsha Ward,[1] Christine E. Seidman,[1,2,3] and Jonathan G. Seidman[1]

[1]Department of Genetics, Harvard Medical School, Boston, Massachusetts, USA
[2]Cardiovascular Division, Brigham and Women's Hospital, Boston, Massachusetts, USA
[3]Howard Hughes Medical Institute, Chevy Chase, Maryland, USA
[4]These authors contributed equally to this work.
[5]Corresponding author: *seongwon_kim@g.harvard.edu*

Published in the Human Genetics section

This protocol describes a robust pipeline for simultaneously analyzing multiple samples by single-nucleus (sn)RNA-seq. cDNA obtained from each single sample are labeled with the same lipid-coupled oligonucleotide barcode (10X Genomics). Nuclei from as many as 12 individual samples can be pooled together and simultaneously processed for cDNA library construction and subsequent DNA sequencing. While previous protocols using lipid-coupled oligonucleotide barcodes were optimized for analysis of samples consisting of viable cells, this protocol is optimized for analyses of quick-frozen cell samples. The protocol ensures efficient recovery of nuclei both by incorporating high sucrose buffered solutions and by including a tracking dye (trypan blue) during nuclei isolation. The protocol also describes a procedure for removing single nuclei 'artifacts' by removing cell debris prior to single nuclear fractionation. This protocol informs the use of computational tools for filtering poorly labeled nuclei and assigning sample identity using barcode unique molecular identifier (UMI) read counts percentages. The computational pipeline is applicable to either cultured or primary, fresh or frozen cells, regardless of their cell types and species. Overall, this protocol reduces batch effects and experimental costs while enhancing sample comparison. © 2022 Wiley Periodicals LLC.

Basic Protocol 1: Labeling cells with lipid oligo barcodes and generating multiplexed single-nucleus RNA-seq libraries
Basic Protocol 2: Bioinformatic deconvolution of the multiplexed snRNAseq libraries

Keywords: lipid oligo barcode • multiplex • nuclei isolation • single-nucleus RNA sequencing

How to cite this article:
Zhang, Q., Kim, S. W., Gorham, J. M., DeLaughter, D. D., Ward, T., Seidman, C. E., & Seidman, J. G. (2022). Multiplexed single-nucleus RNA sequencing using lipid-oligo barcodes. *Current Protocols*, *2*, e579. doi: 10.1002/cpz1.579

INTRODUCTION

The advent of transcription profiling at single-cell resolution has become a powerful approach to reveal diverse cell populations and states within biological systems (Hwang, Lee, & Bang, 2018). Advances in droplet-microfluidic technology, which

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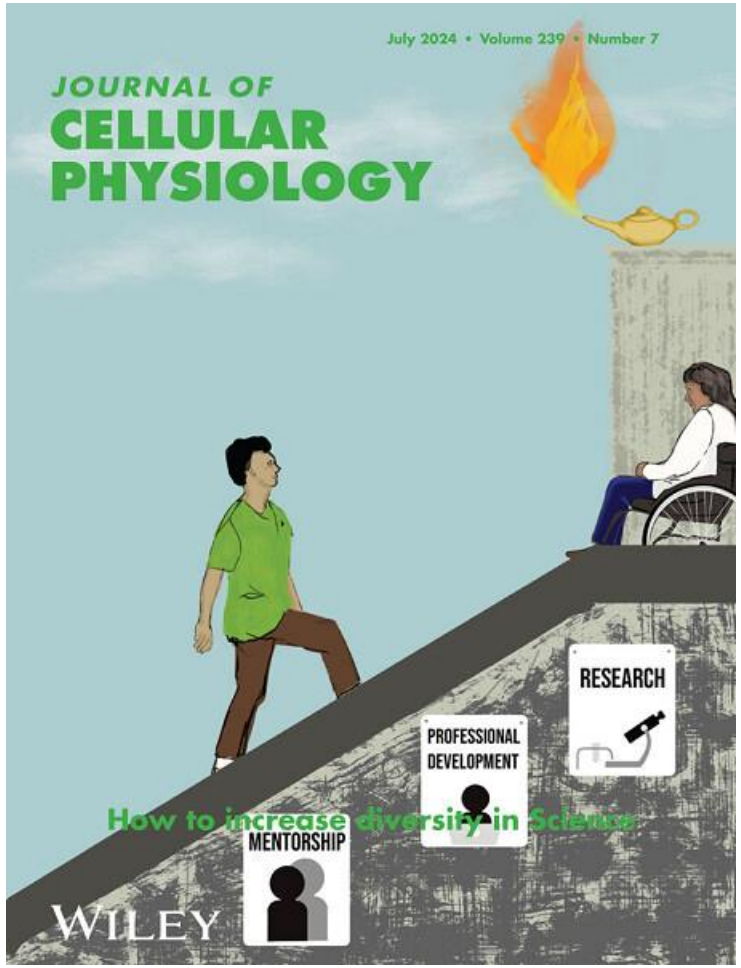
Other Considerations (Poll)

Be Realistic About Impact Factor

15.1



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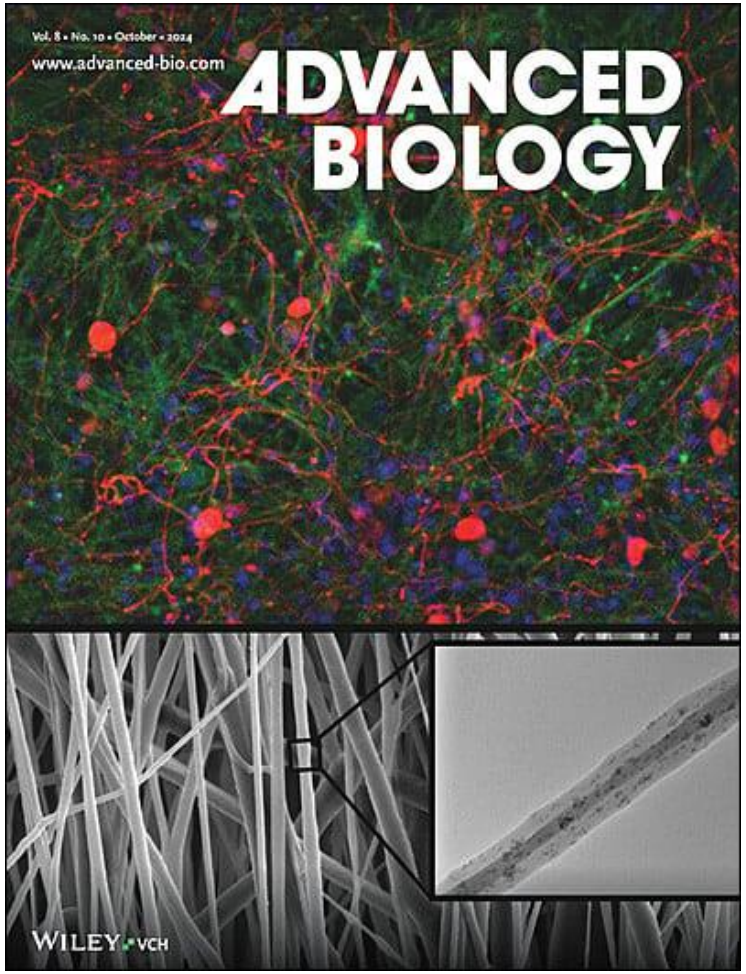

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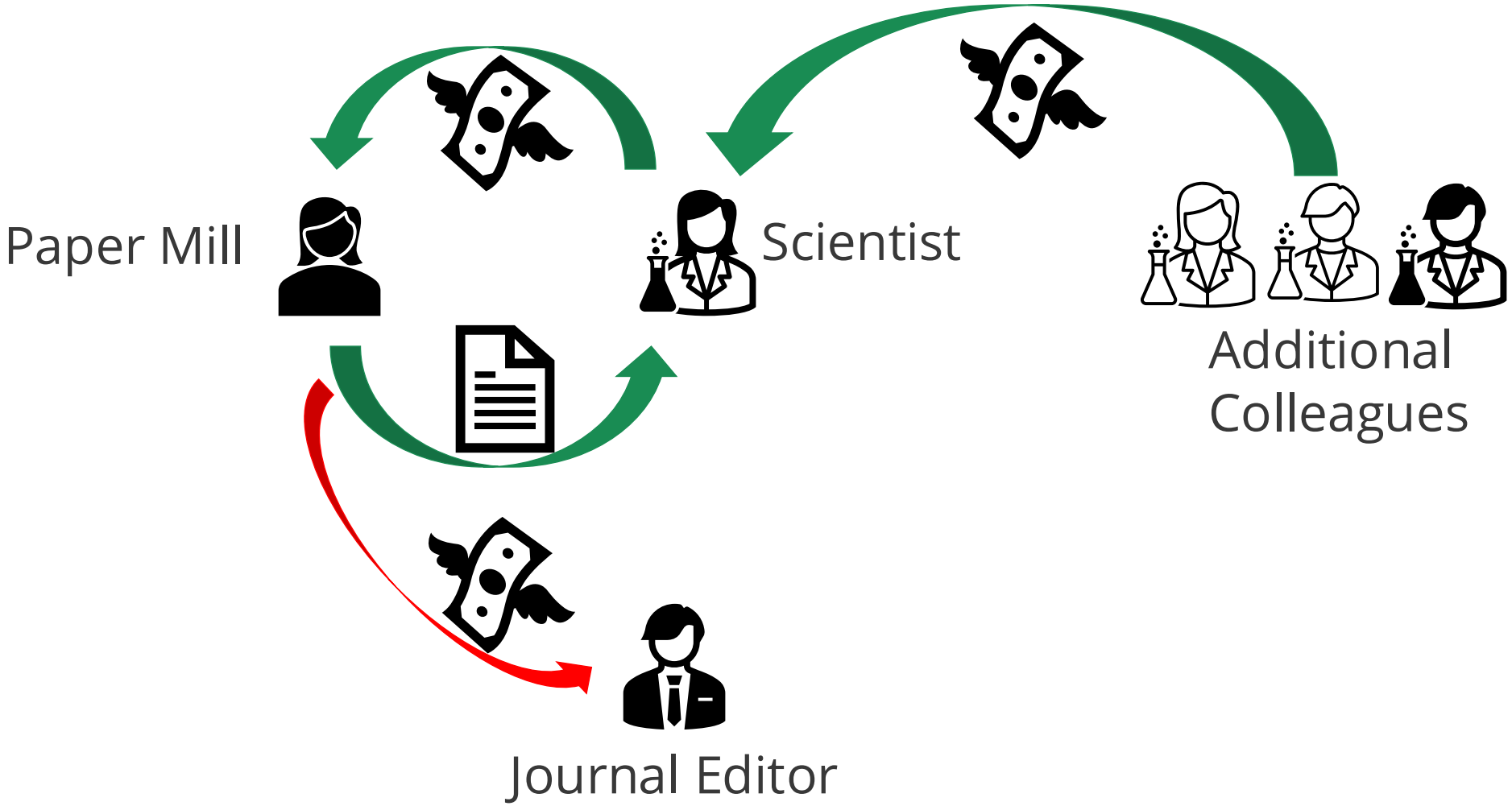
Don’t do anything that looks suspicious

What is a papermill?



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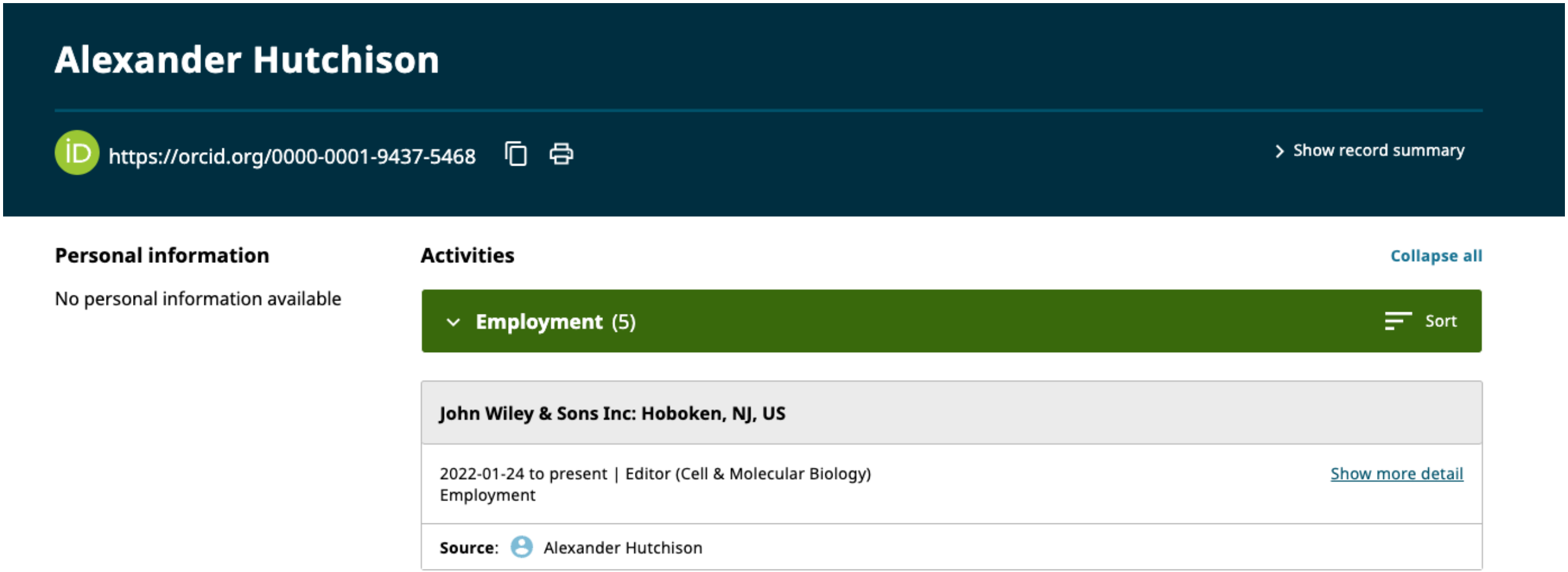
Warning signs we look for

Use an institutional email address

- Bob@yahoo.com (NO!)
- Bob@uh.edu (YES!)
- Use both if need be.

Have an ORCID and keep it up to date. (Co-authors too)



Put your cover letter on institutional letter head.

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Basic Sciences
Antentor Hinton, Jr., Ph.D.
Assistant Professor
Department of Molecular Physiology and Biophysics
Ernest E. Just Early Career Investigator

November 23rd, 2023

Dr. Alexander Hutchison, Editor-in-Chief
Journal of Cellular Physiology

Dear Dr. Hutchison,

I am pleased to submit our manuscript entitled "Weaponizing Predicaments and Workplace Toxicity to Impede Minority Progress in STEAMM" for consideration for publication in *Journal of Cellular Physiology*. This article presents a comprehensive exploration of the prevalence and impact of weaponized mentoring in the context of toxic work environments within science, technology, engineering, mathematics, and medicine (STEMM) fields. Specifically, this is for the Special Issue of *Journal of Cellular Physiology* on the subject of "How to Increase Diversity in Science Under Troubling Times".

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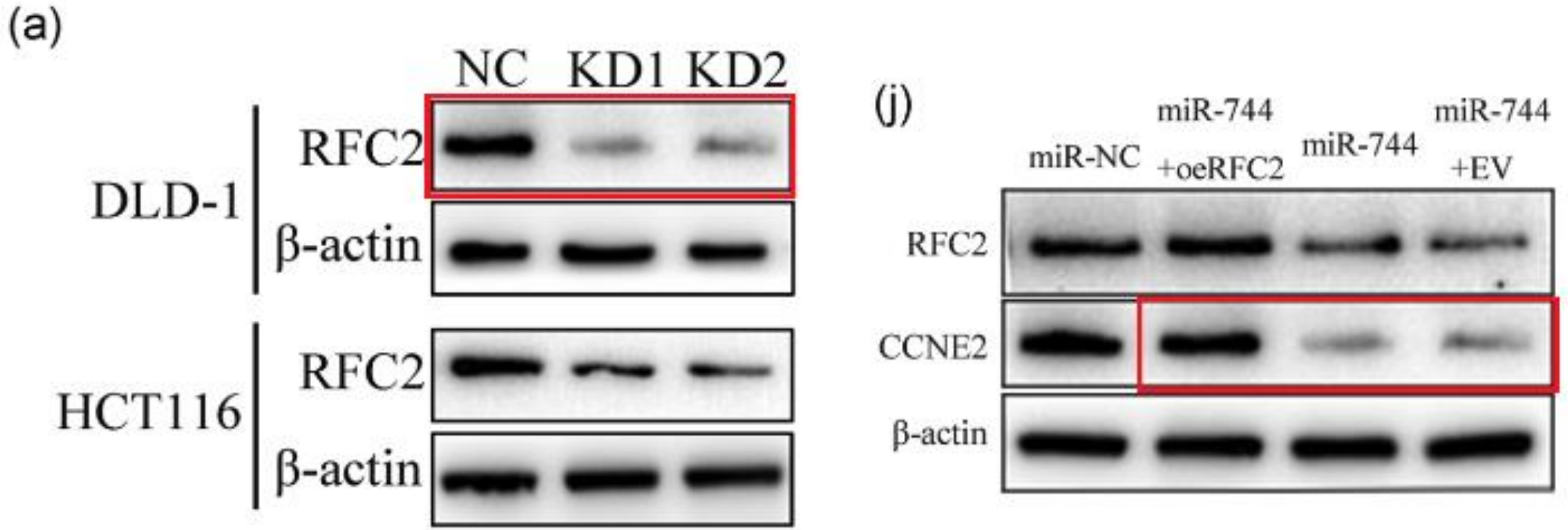
Image Manipulation (Don’t Fake It, You Won't Make It)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NC
KD1
KD2
DLD-1
RFC2
β-actin
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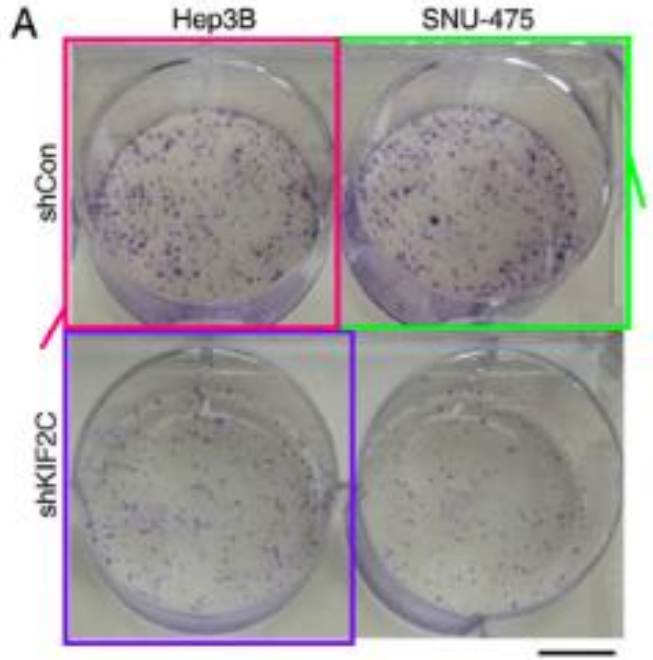
miR-744
miR-744 +EV
RFC2
CCNE2
β-actin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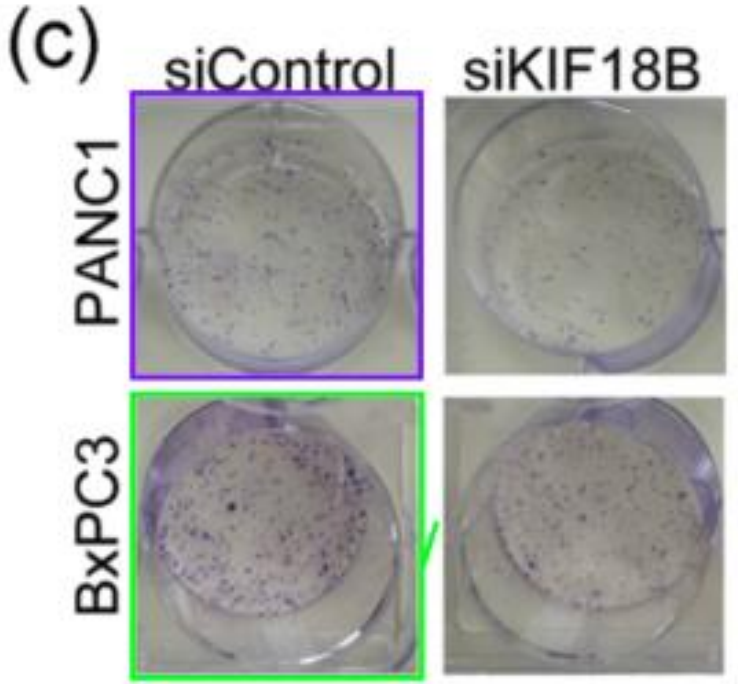
(c)
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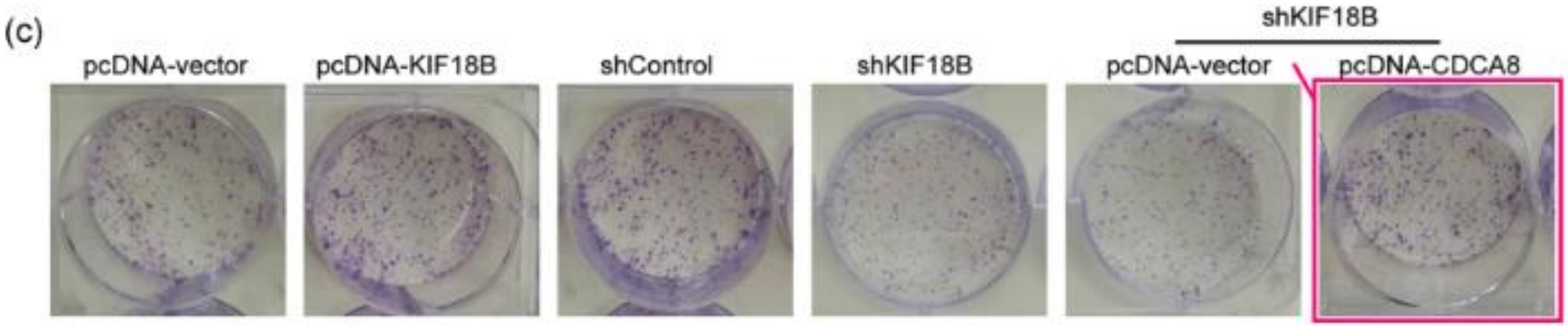
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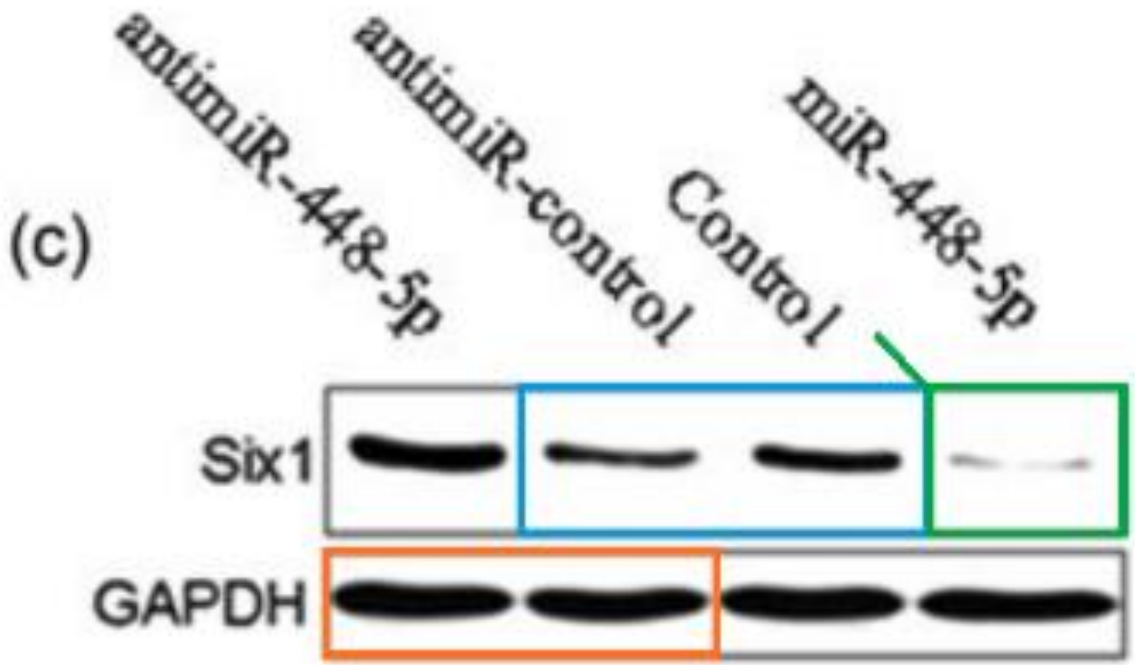
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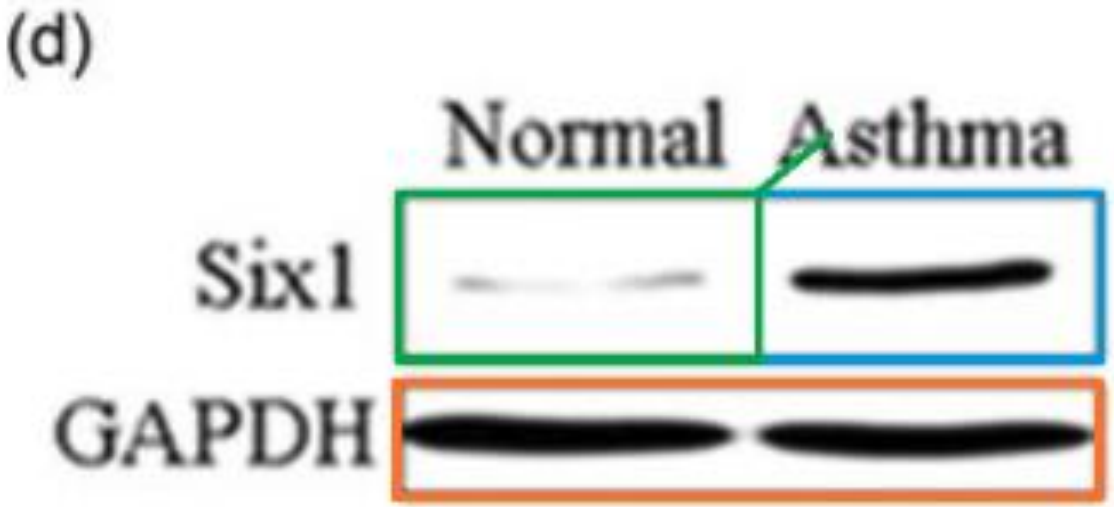
Six1
GAPDH


(d)
Normal
Asthma
Six1
GAPDH

Wrapping things up

Follow instructions

- Follow the author guidelines
- Impact factor matters
- Maintain accurate professional records
  - Employment
  - Publications
  - Grants
- Institutional email
- Letterhead
- Images
- Last note
- Parsimony (Less is more)