

# Welcome to 165A Discussion Section

## Teaching assistants



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**Office hours:**

Mon 11–12, Tues 3–4; Boyer 244  
Wed 1pm–3 pm; Bomb shelter  
TBA

## What are the goals of I 65A?

1. Learn fundamentals of cell biology
2. Understand the tools and methods used by modern cell biologists
3. Learn how to implement those methods to answer biological questions
4. Become a fluent and critical reader of primary cell biology literature

## What is the purpose of discussion sections?

1. Work through original research papers with the TA's guidance
2. **Actively participate** in discussion

## How can I make the most of discussion sections?

1. Attend every section, be prompt
2. Read papers carefully before attending
3. Actively participate: ask questions, make comments

**This is meant to be a **discussion**, not a lecture**

## Assignment

1. Read each paper thoughtfully before attending
2. Complete take home-quizzes
  - assigned the week of discussion (on the class website)
  - due at the beginning of the following discussion

## Take home quizzes

4-6 questions about the assigned paper that may test:

- Your understanding of basic methods and results
- Logic of experimental design and interpretation
- Significance of findings
- Ability to think critically about findings and design future experiments

Be precise and concise in your answers

Answering in bullet points is acceptable

Be concise!

Typing preferred, but if you write by hand, write neatly

Points off for long, rambling answers

## Take home quizzes

4-6 questions about the assigned paper that may test:

- Your understanding of basic methods and results
- Logic of experimental design and interpretation
- Significance of findings
- Ability to think critically about findings and design future experiments

Use your own words!

Your answer should not be a direct quotation from the paper.

## Take home quizzes

6 take home quizzes, lowest will be dropped

Total = 20% of your grade

Many questions on the exam will be about the discussion papers, so you really should understand them forward and backwards

## Reading papers, where do I start?

Everyone will develop their own approach, but here's a suggestion:

1. Read the paper all the way through to get main points, basic experimental approach--don't worry about details
2. Read it again, make a list of anything you didn't understand: jargon, methods
3. Look up what you didn't understand (more on this in a minute)
4. Read the paper again
5. Analyze at each figure carefully
6. Attend discussion section, armed with questions, observations
7. Read the paper again

## Where can I find information to help me figure out things I don't understand in the paper?

1. Methods section of the paper
2. Course material: lectures, text book
3. Internet: dictionaries, wikipedia (with caution), course websites, website of the senior author
4. Go to the journal website; there may be an accompanying video or review article
5. Look up references from the paper, or do your own pubmed search



# Anatomy of a journal article

## 1. Abstract

Read first: Should clearly state main finding, significance

## 2. Introduction

Provides necessary background, last paragraph usually restates approach

## 3. Results/Figures

Most important part of paper: go back and forth between figures and text

## 4. Discussion

Puts results in context, tries to convey significance

## 5. Methods

Not necessary to understand every detail, but useful for reference

## 6. References

Useful if you need more information on background

## 7. Supplemental Data

Sometimes not important, but often there's something useful. e.g. Movies!

## Understanding a figure

What is the main point of the figure?

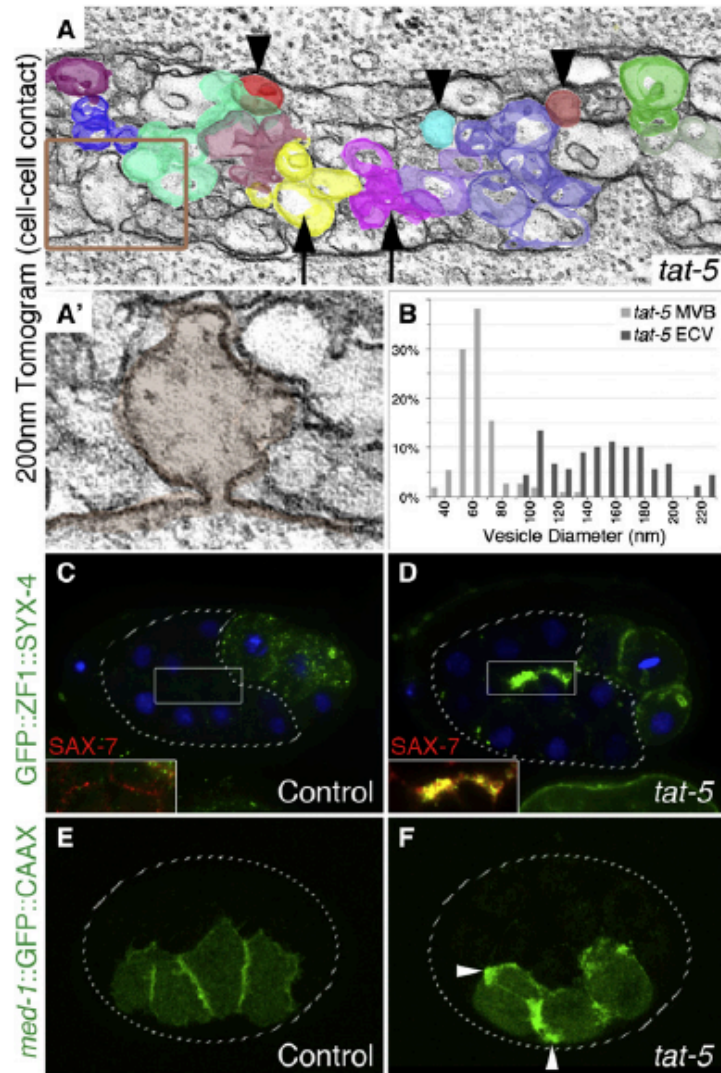


Figure 3. Extracellular Vesicles Are Generated by Budding from the Plasma Membrane

Hint: often the title of the figure legend!

## Understanding a figure

How do the experiments shown in each panel contribute to the main point of the figure?

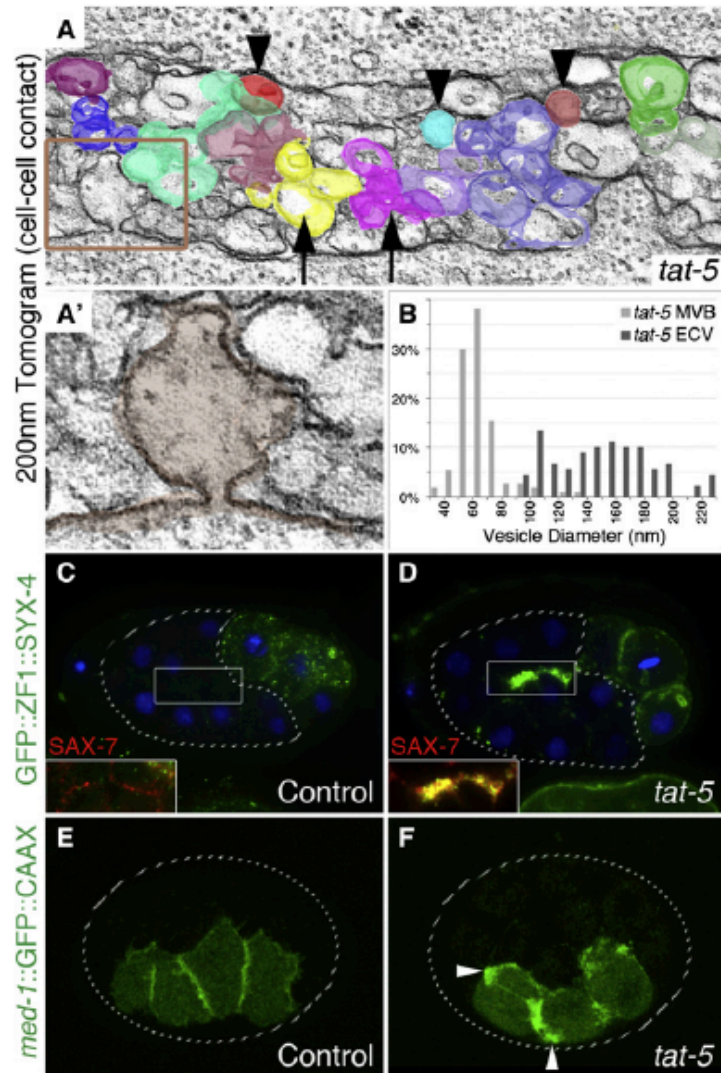
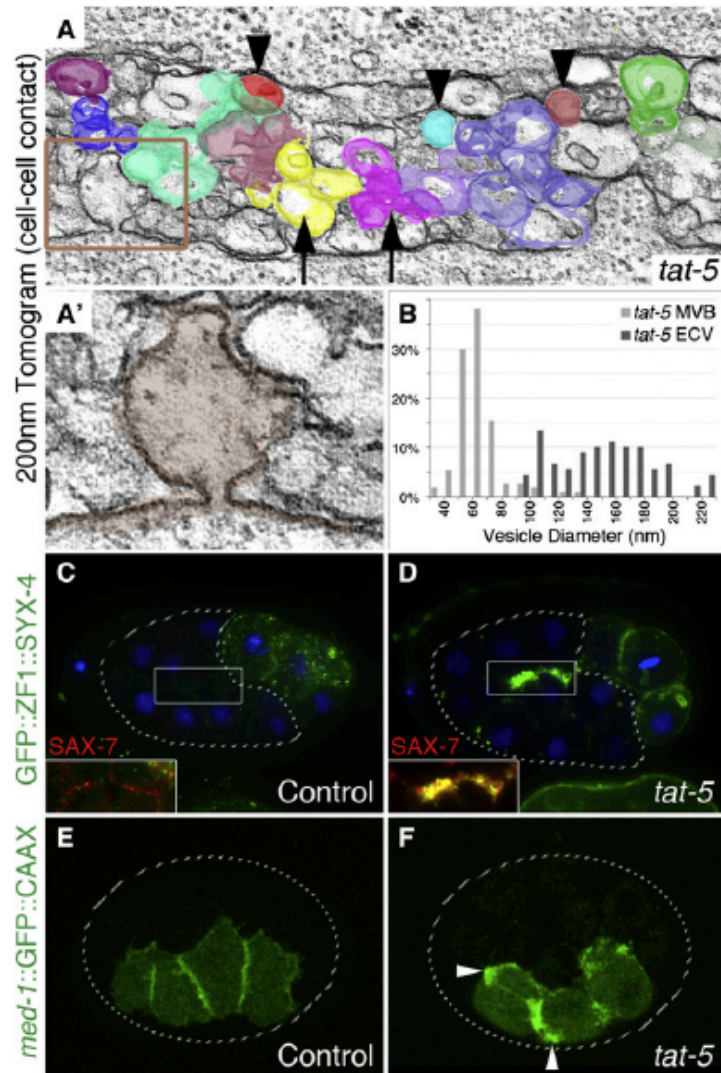


Figure 3. Extracellular Vesicles Are Generated by Budding from the Plasma Membrane

## Understanding a figure

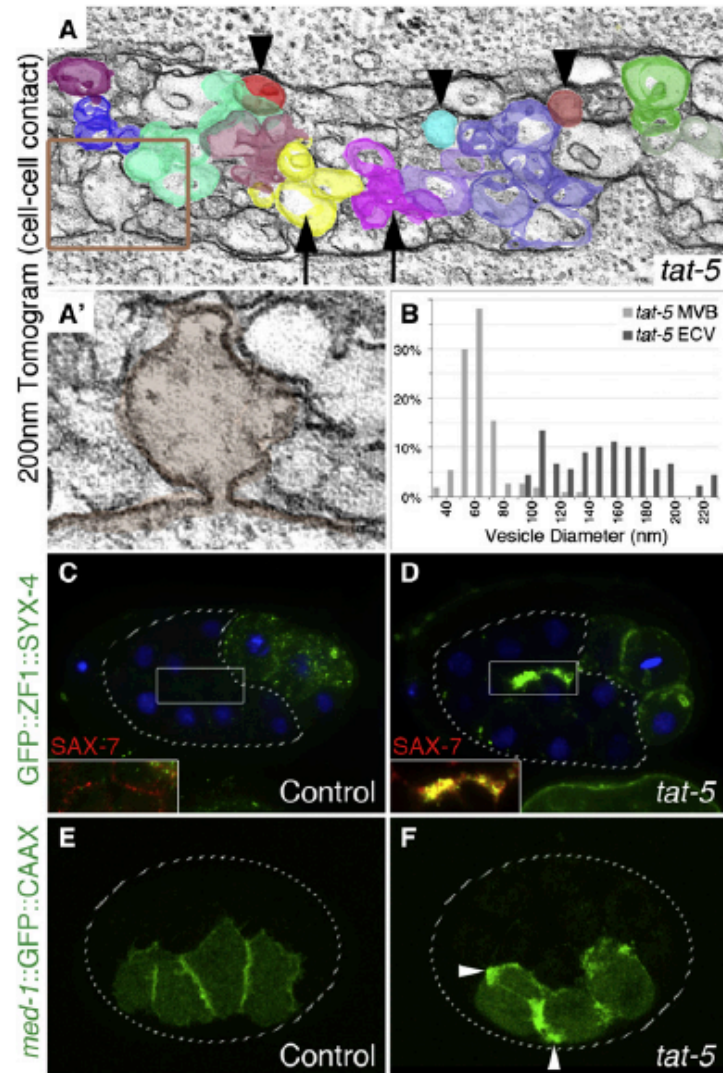


How was each experiment done, how was each figure generated?

What kind of microscopy is this?

Figure 3. Extracellular Vesicles Are Generated by Budding from the Plasma Membrane

## Understanding a figure



How was each experiment done, how was each figure generated?

What kind of stain was used? e.g. what is the green and blue? antibodies? fluorescent protein?

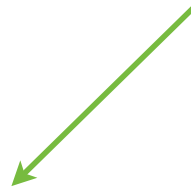
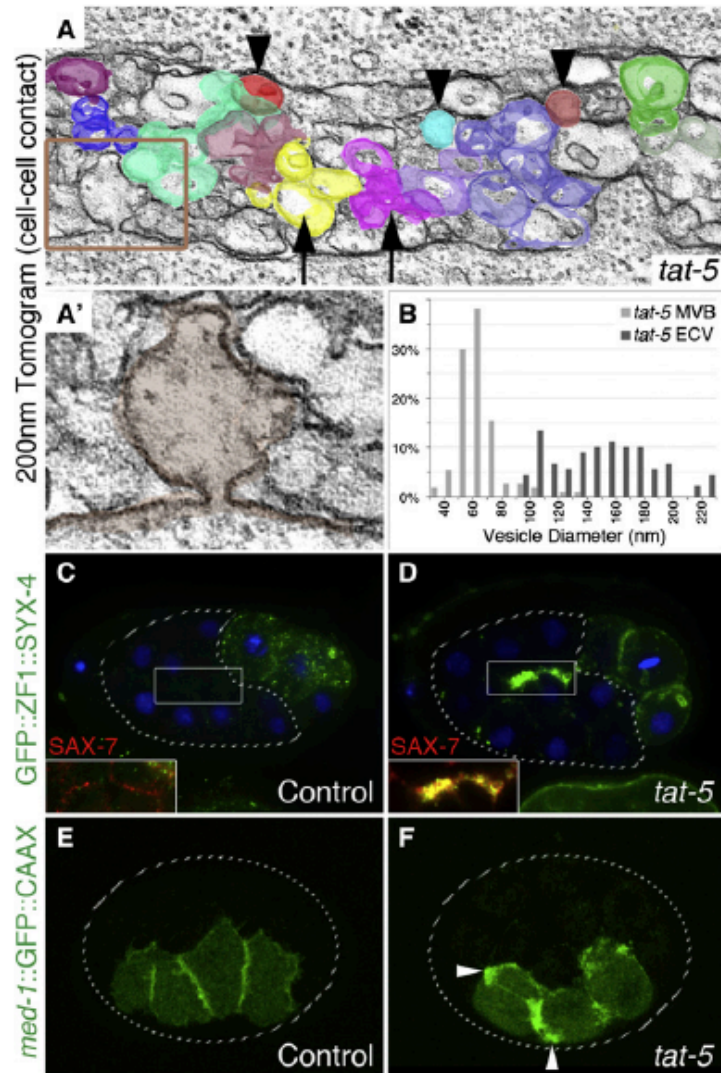


Figure 3. Extracellular Vesicles Are Generated by Budding from the Plasma Membrane



## Understanding a figure



How was each experiment done, how was each figure generated?

What is represented on the X and Y axes?

Figure 3. Extracellular Vesicles Are Generated by Budding from the Plasma Membrane

## Understanding a figure

How do the experiments shown in each panel contribute to the main point of the figure?

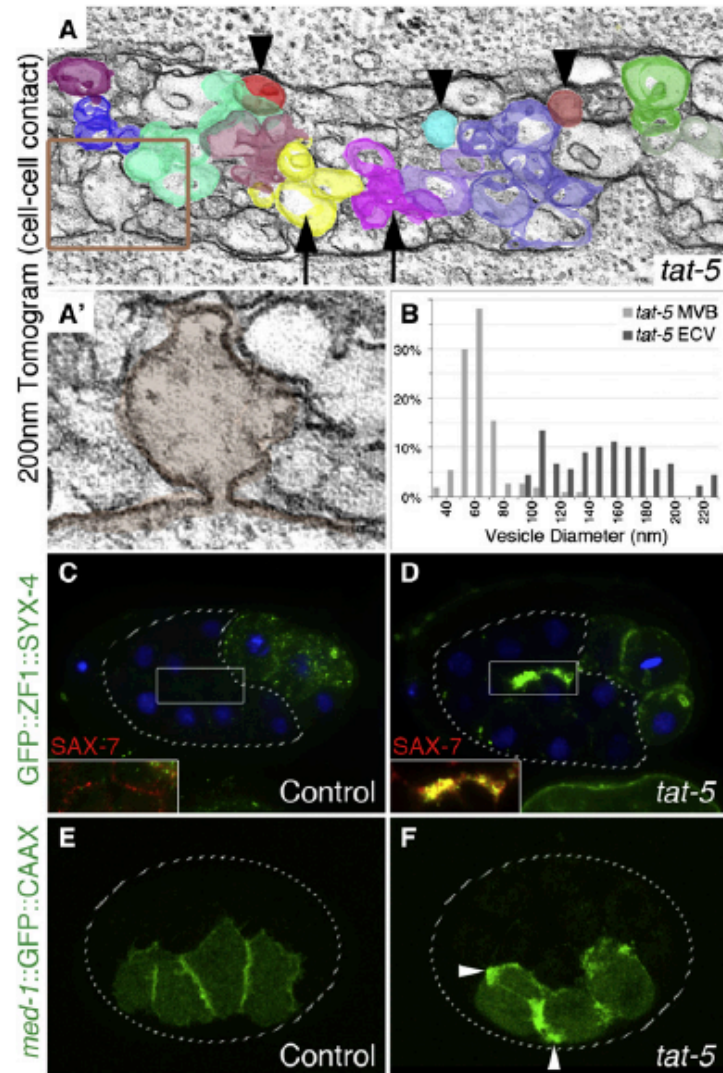


Figure 3. Extracellular Vesicles Are Generated by Budding from the Plasma Membrane

Which data points represent controls and what was their purpose?

## Understanding a figure

How do the experiments shown in each panel contribute to the main point of the figure?

How convincing were these experiments? What more evidence would you want to see to believe their conclusions?

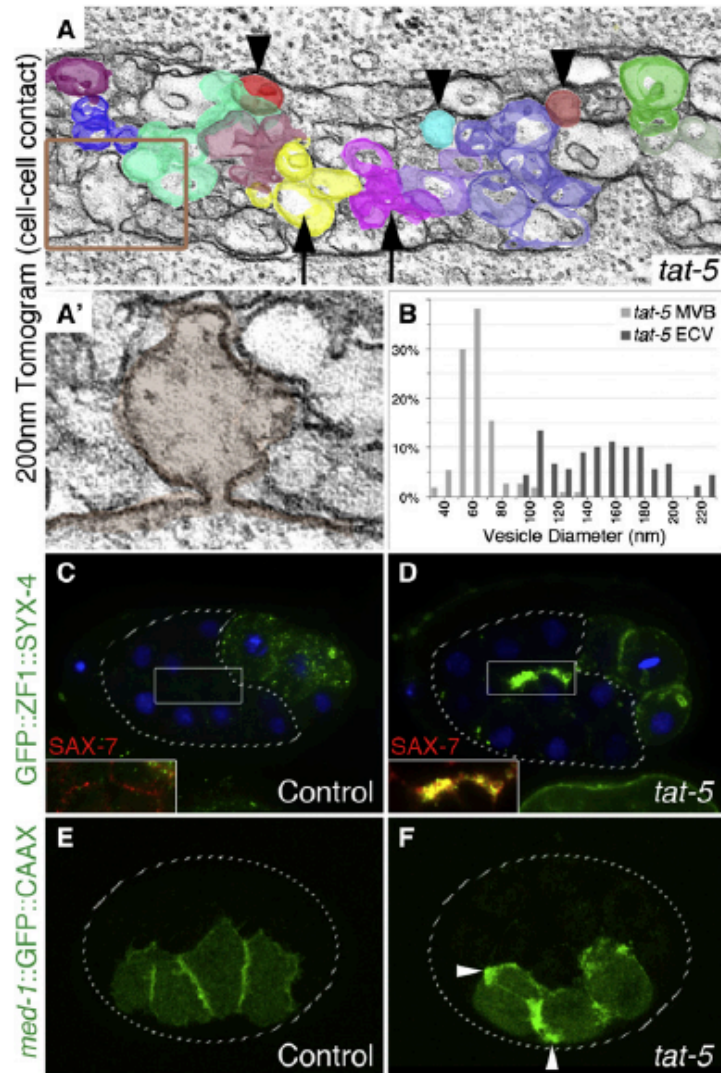


Figure 3. Extracellular Vesicles Are Generated by Budding from the Plasma Membrane



## Finding the articles

PDFs will be posted on the class website, but you should always also find the articles online through the UCLA website

Why? Online you may look at supplemental material (e.g. movies!), can enlarge figures on your own computer

You have free access to all the journals through the UCLA biomed library

# Finding articles:

## Method I: Go to journal website

Search for authors

The screenshot shows the homepage of The Journal of Cell Biology (JCB). The browser address bar displays <http://jcb.rupress.org/>. The website has a navigation bar with links: HOME, CURRENT ISSUE, NEWEST ARTICLES, NEWS & FEATURES, MULTIMEDIA, and ARCHIVE. A search bar is located in the top right corner, with a green arrow pointing to it from the text "Search for authors". The main content area is divided into several sections: "Current Issue" (December 24, 2012), "Research Highlights" (Kinetochores, Blame ATAD5, etc.), "Announcements", "Newest Articles" (ATAD5-RLC disassembles replication), "Reviews" (Spindle orientation and disease), "People & Ideas" (Li-Huei Tsai), "Original Image Data" (JCB DataViewer), "Podcasts" (biobytes), and "Collections" (Aging, etc.).



## Start your research

## Books &amp; More

Find books, journals and more.

Articles

Databases

Journals

Research Guides

Archives &amp; Manuscripts

☒ Melvyl UC Catalog (+selected articles)☐ UCLA Library Catalog

Search

What am I searching?



Melvyl provides information about articles, books, journals and other materials held by UCLA, other University of California (UC) campuses, and libraries worldwide. This search is limited to University of California Libraries, but can be changed via a pulldown search limit on the results screen. Many records contain links to full-text articles from selected databases.

Need more help? Browse our [Research Guides](#)

## Today's Hours

Arts Library ▶	8a-8p
Biomedical Library (Louise M. Darling) ▶	7:30a-11p
East Asian Library (Richard C. Rudolph) ▶	7:30a-11p
Law Library (Hugh & Hazel Darling) ▶	9a-8:30p
Library Special Collections ▶	10a-5p
Management Library	

## Get Started at the Library

- [Get your library card ▶](#)
- [Renew a book ▶](#)
- [Connect from off-campus ▶](#)
- [Log in to your library account ▶](#)
- [Get help with your research ▶](#)
- [Find a course reserve ▶](#)
- [Attend a workshop ▶](#)
- [Find a Group Study Room ▶](#)

## Project Highlights

LA Aqueduct Digital Platform  
Launched

This resource provides public access to archival material, new scholarship, and interactive experiences relating to the aqueduct.



## UC Open Access Policy for Faculty

The UC Open Access Policy went into effect last year for published research articles. The UCLA Library can provide assistance and answer...

View Video of "Dissertation to Book"  
Panel

The UCLA Library recently hosted a panel of

Click on Biomedical  
Library



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Using the Library

## Biomedical Library (Louise M. Darling)

12-077 Center for Health Sciences, Los Angeles, CA 90095-1798 | (310) 825-4904 | [biomed-ref@library.ucla.edu](mailto:biomed-ref@library.ucla.edu)

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[Staff Directory](#)

### About the Library

The Louise M. Darling Biomedical Library serves primarily the David Geffen School of Medicine at UCLA, Jonathan and Karin Fielding School of Public Health, Schools of Dentistry, and Nursing; the Life Sciences divisions of the College of Letters and Sciences; related institutes in biomedicine; and the Ronald Reagan UCLA Medical Center.

[Learn More](#)

### Hours

◀ Jan 5-11 ▶	M 05	Tu 06	W 07	Th 08	F 09	Sa 10	Su 11
Library	7:30a-11p	7:30a-11p	7:30a-11p	7:30a-11p	7:30a-6p	9a-5p	1p-10p
Reference Services	1p-5p	1p-5p	1p-5p	1p-5p	1p-5p	closed	closed
Technology and Learning Center	7:30a-11p	7:30a-11p	7:30a-11p	7:30a-11p	7:30a-6p	9a-5p	1p-10p
24 Hour Graduate Reading Room - Restricted	24 hours	24 hours	24 hours	24 hours	24 hours	24 hours	24 hours
Library Special Collections for Medicine and the Sciences (Biomedical Library)	8:30a-12:30p	8:30a-12:30p	8:30a-12:30p	8:30a-12:30p	8:30a-12:30p	closed	closed
CLICC Laptop Lending (Biomedical Library)	7:30a-10p	7:30a-10p	7:30a-10p	7:30a-10p	7:30a-5p	9a-4p	1p-9p

[News](#)[Upcoming Events](#)[Schedule a Research Appointment](#)

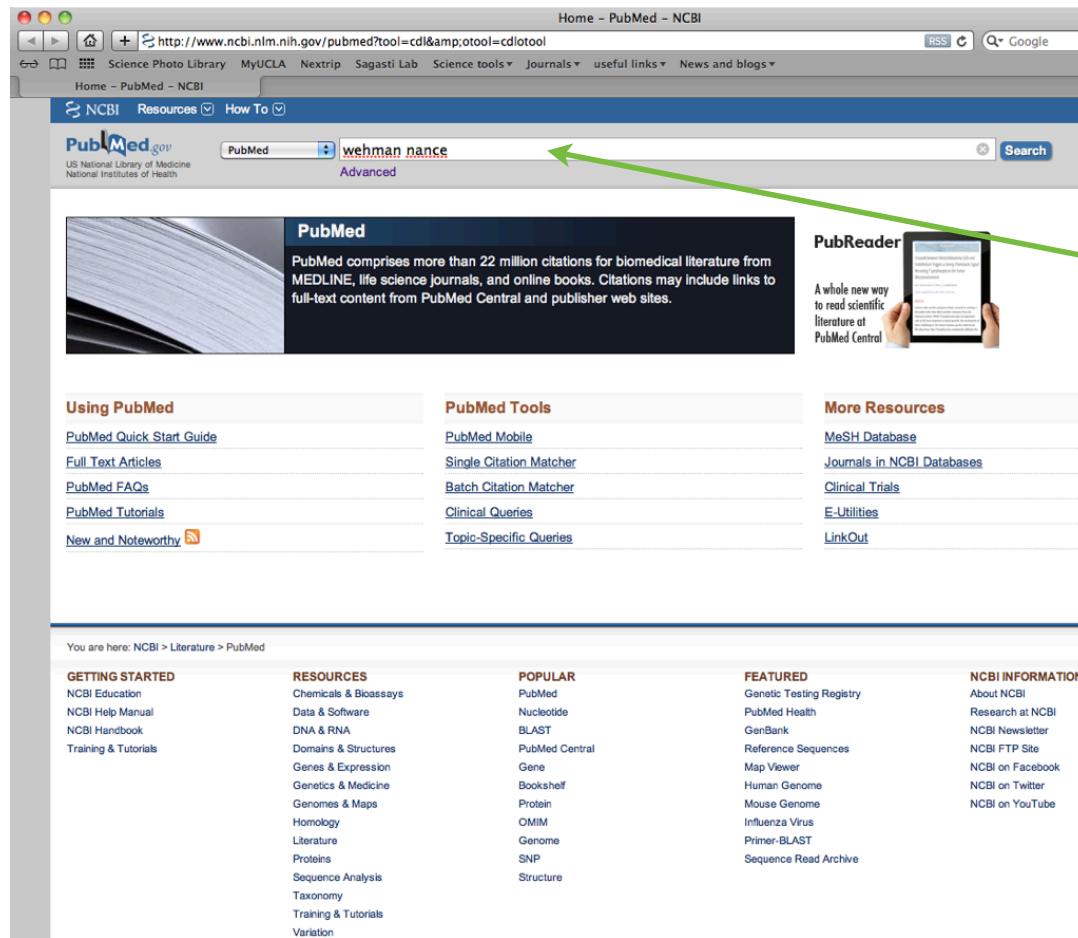
MD Consult no longer available

Click on PubMed at UCLA

# Finding articles:

## Method 2: Go to pubmed

In pubmed, search by author/key words



# Finding articles:

Method 2: Go to pubmed

Click on the article you want

The screenshot shows the PubMed website interface. The search bar at the top contains the text 'wehman nance'. Below the search bar, the results are displayed. On the left side, there are filters for 'Article types', 'Text availability', 'Publication dates', and 'Species'. The main results area shows two articles. The first article is titled 'The P4-ATPase TAT-5 inhibits the budding of extracellular vesicles in C. elegans embryos.' and is authored by Wehman AM, Poggioli C, Schweinsberg P, Grant BD, and Nance J. The second article is titled 'PAR-3 mediates the initial clustering and apical localization of junction and polarity proteins during C. elegans intestinal epithelial cell polarization.' and is authored by Achilleos A, Wehman AM, and Nance J. A green arrow points to the first article. On the right side, there are sections for '2 free full-text articles in PubMed Central', 'Find related data', 'Search details', and 'Recent activity'.

wehman nance - PubMed - NCBI

http://www.ncbi.nlm.nih.gov/pubmed?term=wehman%20nance

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NCBI Resources How To

PubMed US National Library of Medicine National Institutes of Health

PubMed wehman nance Search

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Show additional filters

Article types more ...

Text availability Abstract available Free full text available Full text available

Publication dates 5 years 10 years Custom range...

Species Other Animals

Clear all

Show additional filters

Display Settings: Summary, Sorted by Recently Added

★ Did you mean: [wehman nance](#) (4 items)

Results: 2

☐ [The P4-ATPase TAT-5 inhibits the budding of extracellular vesicles in C. elegans embryos.](#)

1. **Wehman AM, Poggioli C, Schweinsberg P, Grant BD, Nance J.** Curr Biol. 2011 Dec 6;21(23):1951-9. doi: 10.1016/j.cub.2011.10.040. Epub 2011 Nov 17. PMID: 22100064 [PubMed - indexed for MEDLINE] [Free PMC Article](#) [Related citations](#)

☐ [PAR-3 mediates the initial clustering and apical localization of junction and polarity proteins during C. elegans intestinal epithelial cell polarization.](#)

2. **Achilleos A, Wehman AM, Nance J.** Development. 2010 Jun;137(11):1833-42. doi: 10.1242/dev.047647. Epub 2010 Apr 28. PMID: 20431121 [PubMed - indexed for MEDLINE] [Free PMC Article](#) [Related citations](#)

★ Did you mean: [wehman nance](#) (4 items)

Send to: Filters: [Manage Filters](#)

2 free full-text articles in PubMed Central

The P4-ATPase TAT-5 inhibits the budding of extracellular vesicles in C. elegans embryos.

PAR-3 mediates the initial clustering and apical localization of junction and polarity proteins during C. elegans intestinal epithelial cell polarization.

Find related data

Database: Select

Find items

Search details

wehman[All Fields] AND nance[All Fields]

Search

Recent activity

wehman nance (2)

nmnat1 congenital (5)

nmnat1 leber's (0)

nmnt1 leber's (1233)

The prevalence and pulmonary consequences of anxiety disorders

# Finding articles:

## Method 2: Go to pubmed

The screenshot shows a web browser window displaying a PubMed article. The address bar shows the URL: <http://www.ncbi.nlm.nih.gov/pubmed/22100064>. The page title is "The P4-ATPase TAT-5 inhibits the budding of extracellular vesicles in C. elegans embryos". The authors listed are Wehman AM, Poggioli C, Schweinsberg P, Grant BD, Nance J. The abstract text is visible, starting with "BACKGROUND: Cells release extracellular vesicles (ECVs) that can influence differentiation...". The page also features a "Cell Press" logo, a "PubReader" section, and a list of "Related citations in PubMed".

journal link usually works

PubMed central version is unedited, unformatted version

UC links always works



# Finding articles:

You found it!

download PDF

check out supplemental data

The screenshot shows the ScienceDirect website interface. The article title is 'Increase in Carbohydrate Utilization in High-Altitude Andean Mice' by Marie-Pierre Schippers et al. The left sidebar contains a table of contents with links to 'Summary', 'Highlights', 'Results and Discussion', 'Species Phylogenetic Relationships', 'Fuel Use during Exercise and at Rest', 'Time to Fatigue', 'Aerobic Capacities', 'Skeletal and Cardiac Muscle Enzymatic Capacities', 'Table 1', 'Conclusions and Perspectives', 'Experimental Procedures', 'Study Design', 'Respirometry', 'Muscle Enzymatic Capacity (Vmax)', 'Statistical Analyses', 'Acknowledgments', 'Supplemental Information', 'Document S1, Figure S1, Tables S1-S3, and Supplemental Experimental Procedures', and 'References'. A green arrow points from the 'download PDF' text to the 'Export citation' and 'PDF (310 K)' links. Another green arrow points from the 'check out supplemental data' text to the 'Supplemental Information' link. A third green arrow points from the 'Scroll through article in html' text to the article title. The article abstract is visible, starting with 'The low oxygen levels at high altitude are a potent and unavoidable physiological stressor to which highland mammals must adapt. One hypothesized adaptation to high altitude is an increased reliance on carbohydrates to support aerobic activities. Based on stoichiometries of combustion, ATP yield per mole of oxygen from carbohydrates is approximately 15% higher than from lipids [1 and 2] (observed difference closer to 30% [3 and 4]), and increased carbohydrate use represents an important oxygen-saving strategy that may be under high selective pressure. Although this hypothesis was first proposed nearly 30 years ago [5], the in vivo patterns of whole-body fuel use during exercise remain undefined for any highland mammal (including humans). Here we use a powerful multispecies approach to show that wild-caught high-altitude (4,000–4,500 m) native species of mice (*Phyllotis andium* and *Phyllotis xanthopygus*) from the Peruvian Andes use proportionately more carbohydrates and have higher oxidative capacities of cardiac muscles compared to closely related low-altitude (100–300 m) native counterparts (*Phyllotis amicus* and *Phyllotis limatus*). These results strongly infer that highland *Phyllotis* have evolved a metabolic strategy to economize oxygen when performing energy-demanding tasks at altitude. This study provides compelling evidence of adjustments in fuel use as an adaptation to high-altitude hypoxia in mammals.'

Scroll through article in html (you can usually enlarge the figures)



See you next week!

(read the article!!!!)