

Dealing with Research Misconduct in Scholarly Publishing

Kaveh Bazargan
19 February 2024



RIVER VALLEY

About River Valley

- 35 years in scholarly publishing
- UK and India (Kerala)
- Started as math typesetters
- End-to-end publishing platforms built in house
- *No dependencies*



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Research Integrity

It's not all bad!

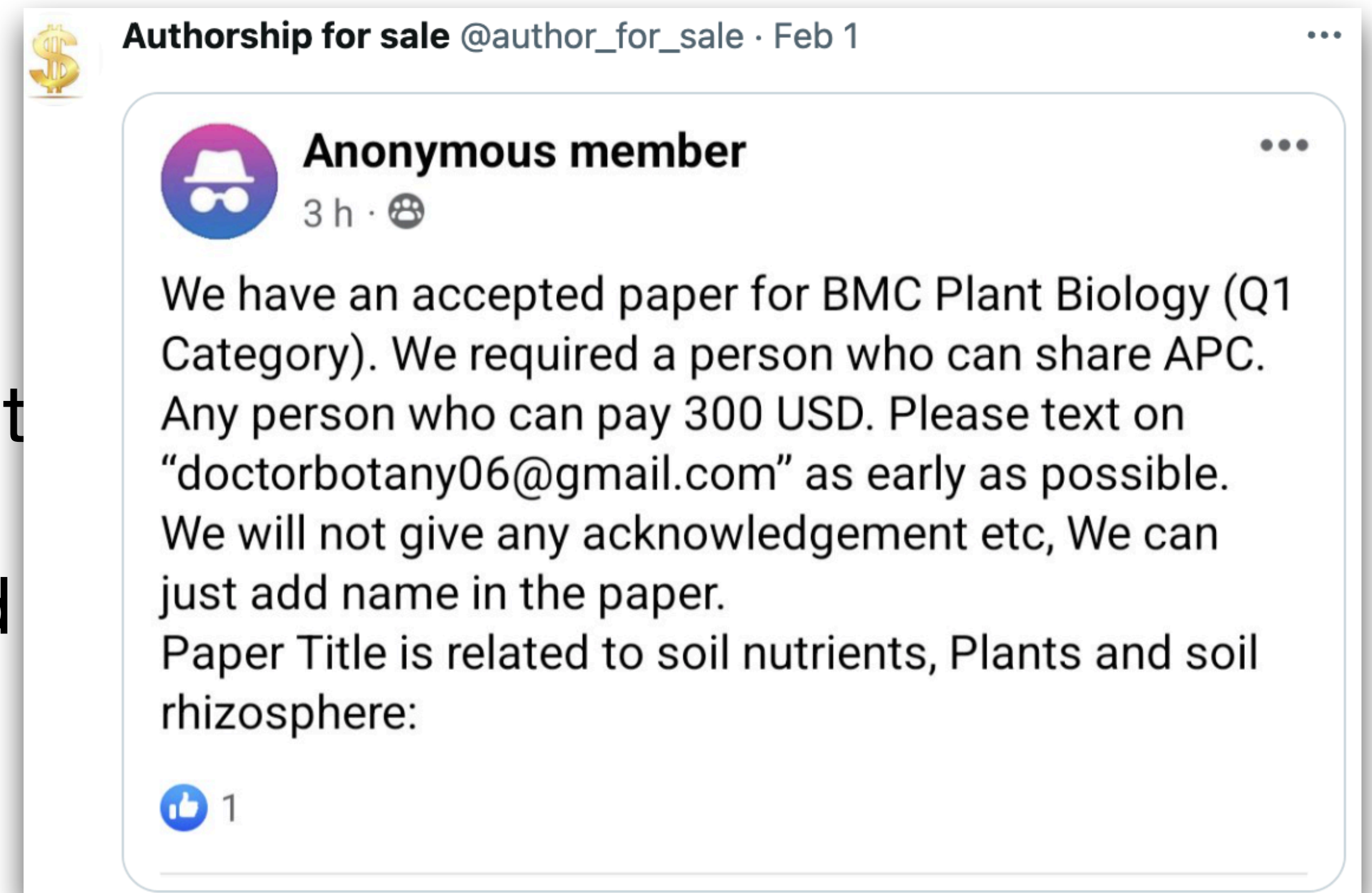
- ★ Accidental errors, e.g. duplication of images
- ★ Emphasizing desired results (*p*-hacking etc)
- ★ Re-using or editing data
- ★ Self-citation, citing irrelevant papers
- ★ Buying authorship

Spoiler alert


- The paper mills are ahead of the game
 - As soon as we close one door another will open
 - Your society is not immune!
- There is no one button solution
 - Next year there will be new ways of cheating!
- A human always has to be involved

The bad guys

- Well organized “paper mills”
- Making huge profits
- Authorships are \$300–3000 according to
- Citations (to boost H-index) are around
- \$100,000s from selling authorship
- Some editors and reviewers also partaking



The good guys

- So-called “sleuths”
- Mostly hobbyists and working pro-bono
- Frequently attacked online, inc. death threats – so some anonymous
- Created huge paper mill databases
- We are all on the same side and we need to support them
- Our contribution – 2000 animations 

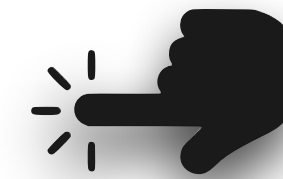
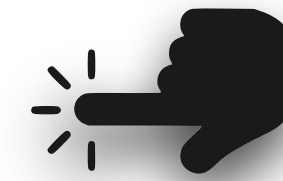
What to look for

Tactical citation

- Excessive self citation
- Minimal self citation – e.g. in ReView article
- Unrelated references
- Citation to retracted references

Other citation tricks

- Sneaked citations in Crossref
- Citation manipulation in Google Scholar



Authors and affiliations

- Emails not matching institution
- Unusual collaborations amongst disparate countries or institutions
 - important not to discriminate
 - Examine data from past collaborations between countries or institutions
- Previous output from institutions
- Author in large collaboration but no previous collaborations
- Authors in different disciplines
 - e.g. Biologist, psychiatrist, and architect

Body of article

- *iThenticate* (or *Similarity Check*)
 - Does not work for translations from other languages
 - e.g. Russian
- Tortured phrases to get around *iThenticate*

Tortured phrases

- Get around plagiarism checking software
- Breast cancer → **Bosom peril**
- Fuzzy logic → **Fluffy rationale**
- Problematic Paper Screener (Guillaume Cabanac + Cyril Labbé)



Tortured phrases

Google Scholar

"fluffy rationale"

Articles About 949 results (0.05 sec)

Any time
Since 2023
Since 2022
Since 2019
Custom range...

Sort by relevance
Sort by date

An optimum design of square microstrip patch antenna based on fuzzy logic rules
[AH Mohammed](#), [MM Hamdi](#), [SA Rashid](#)... - ... Congress on Human ..., 2020 - [ieeexplore.ieee.org](#)
... **fluffy rationale** is to screen non-direct framework which considers as a confused to do it numerically. By applying **fluffy rationale** ... In like manner, the administration of **fluffy rationale** may ...
☆ Save Cite Cited by 43 Related articles All 2 versions

Plan and Reenactment of **Fluffy Rationale** framework for control of pneumatic valve for bottle washer within the refreshment industry
[AF Bentu](#) - International Journal of Engineering Education, 2022 - [ejournal2.undip.ac.id](#)

Peer review

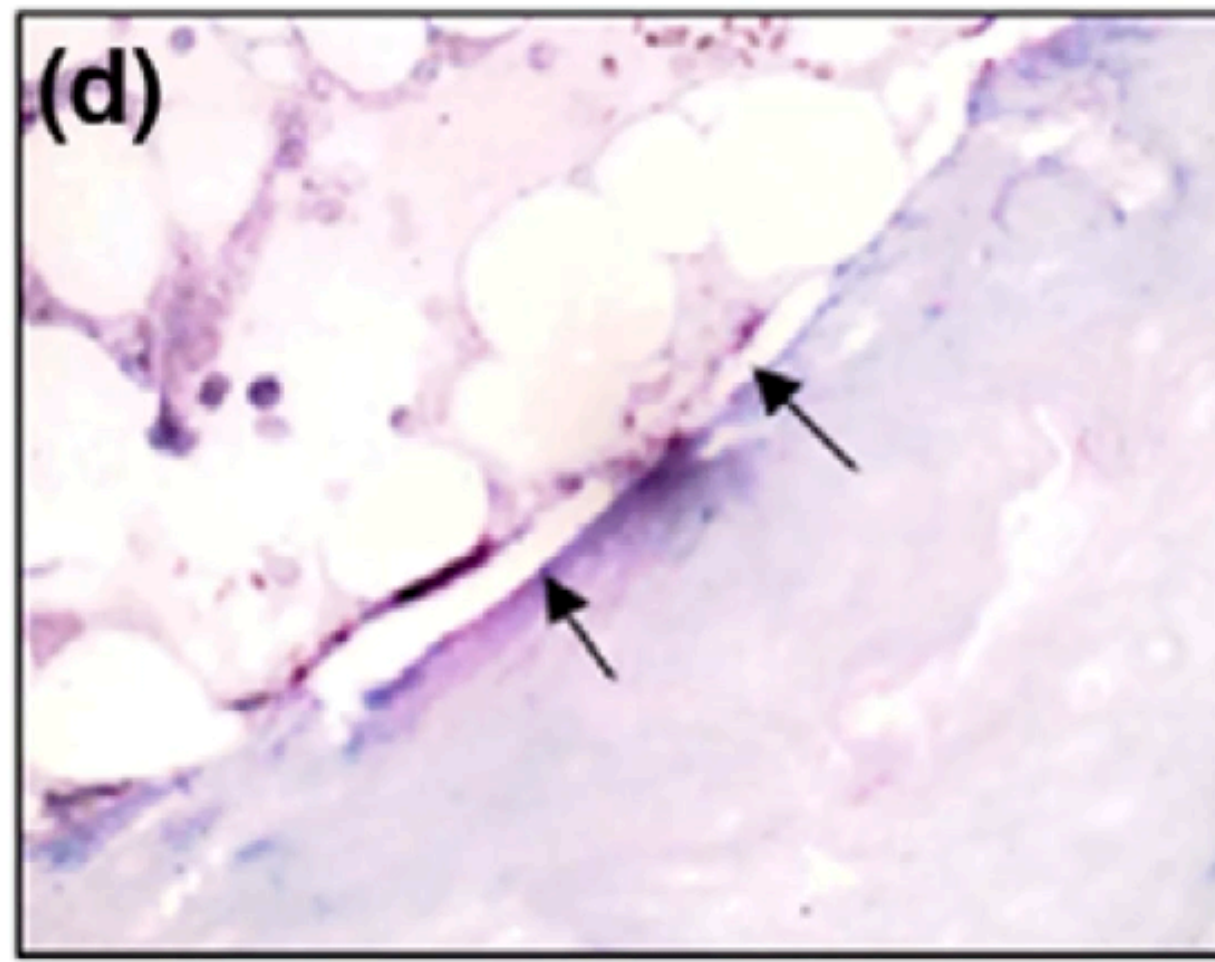
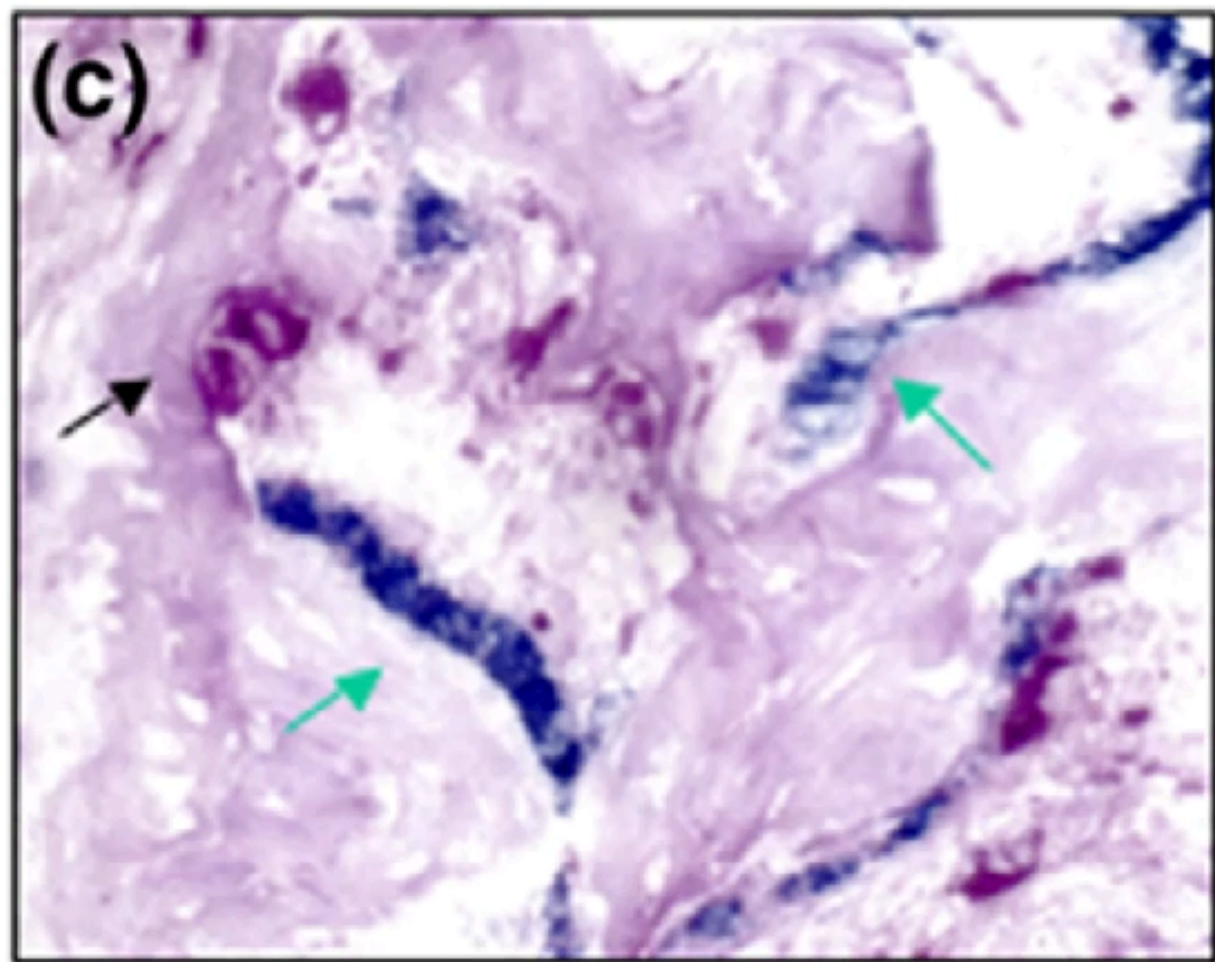
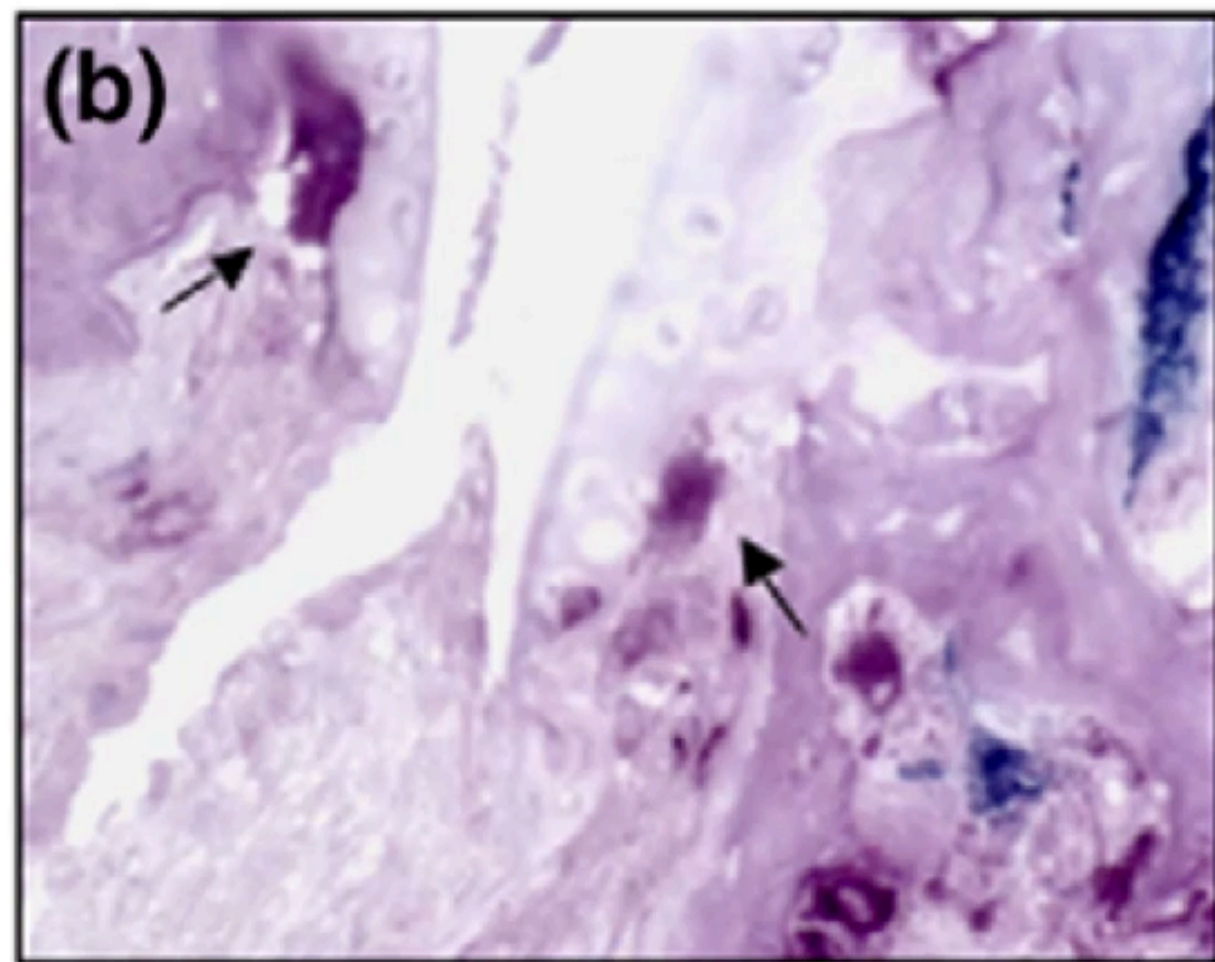
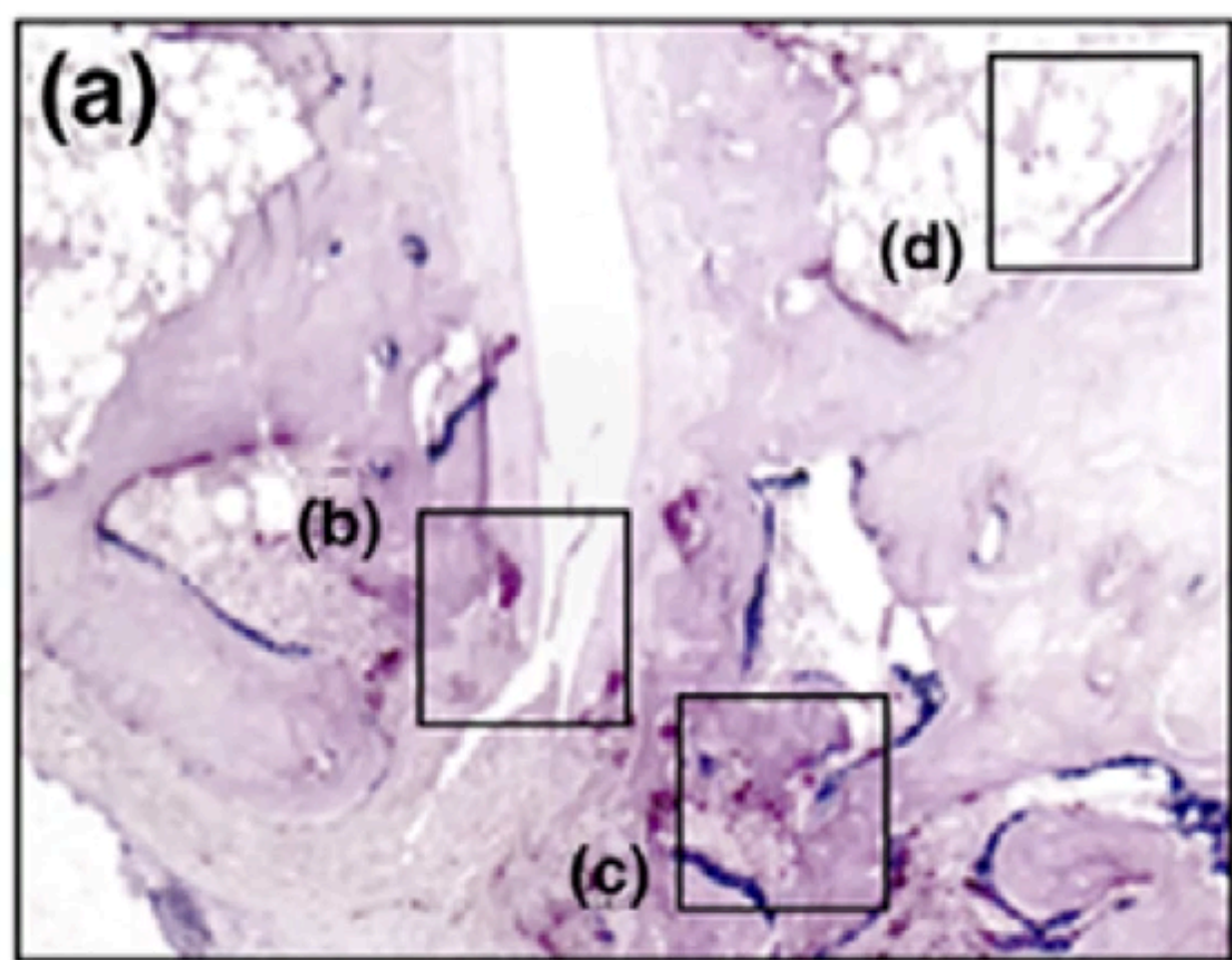
- Duplicated peer review
 - Only see with open peer review
- Minimal peer review
- Author and peer reviewer from same IP address

Hijacked journals

- Devious rebirth of defunct journal
- Same URL or a similar one
- Take APC and publish with little or no review

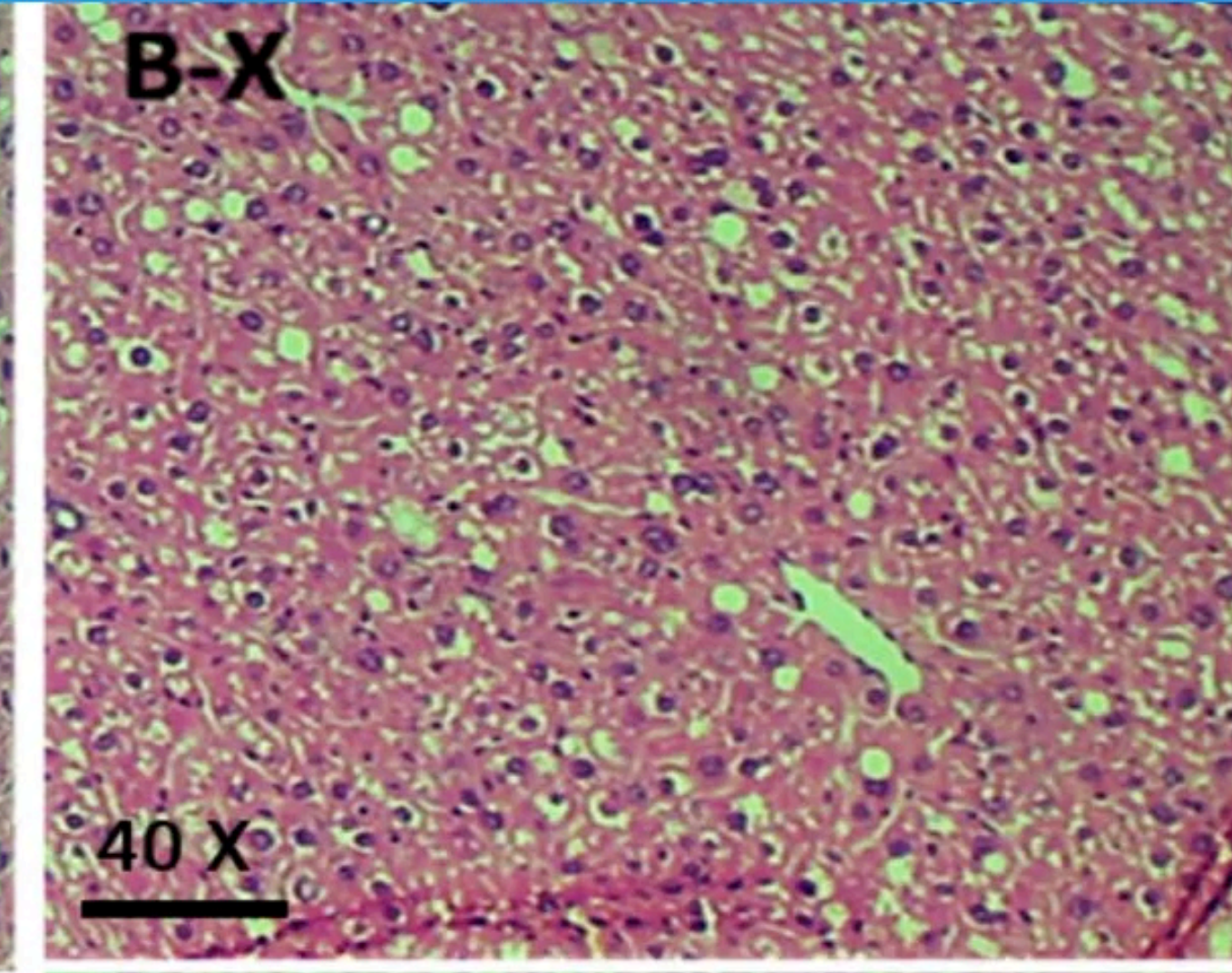
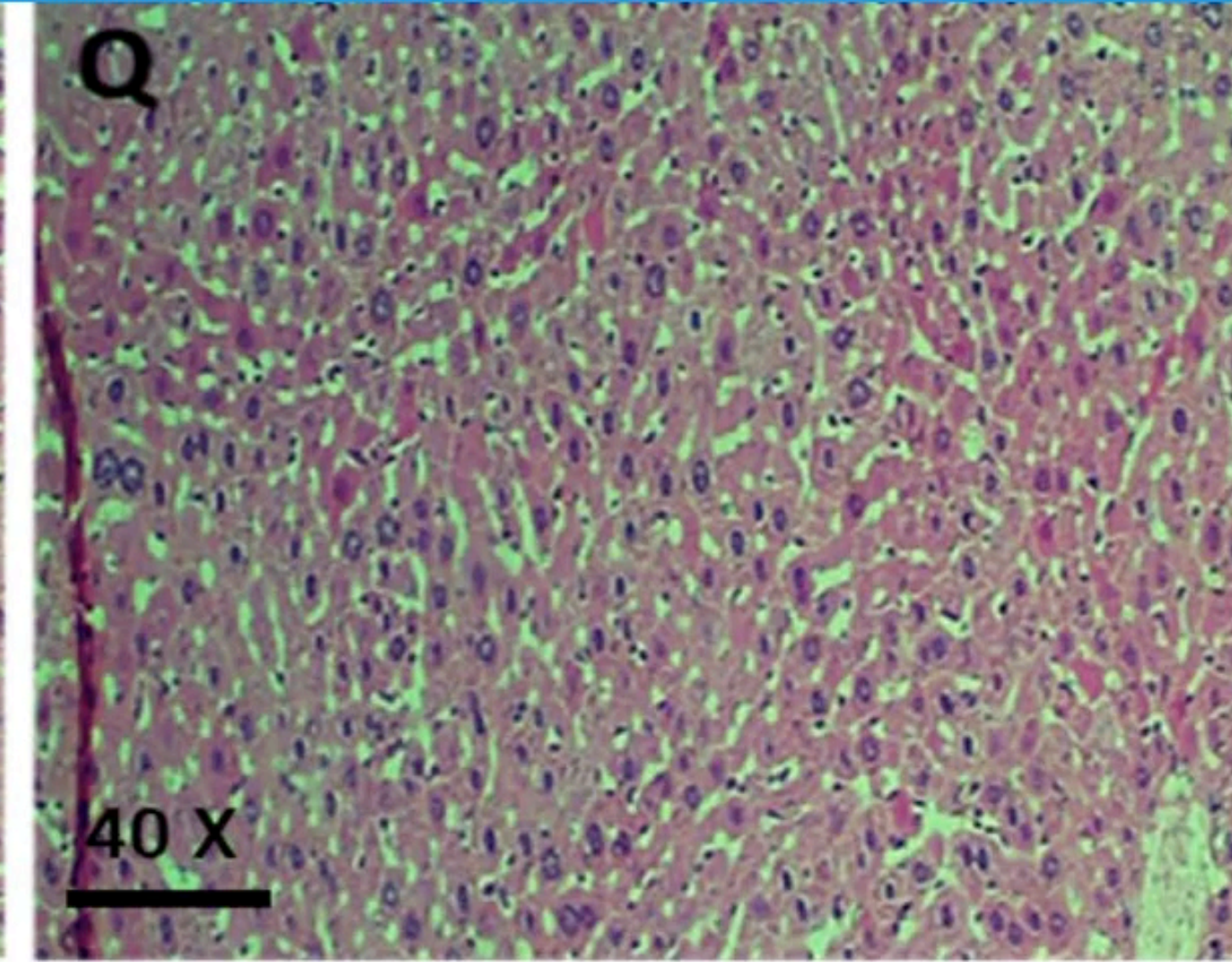
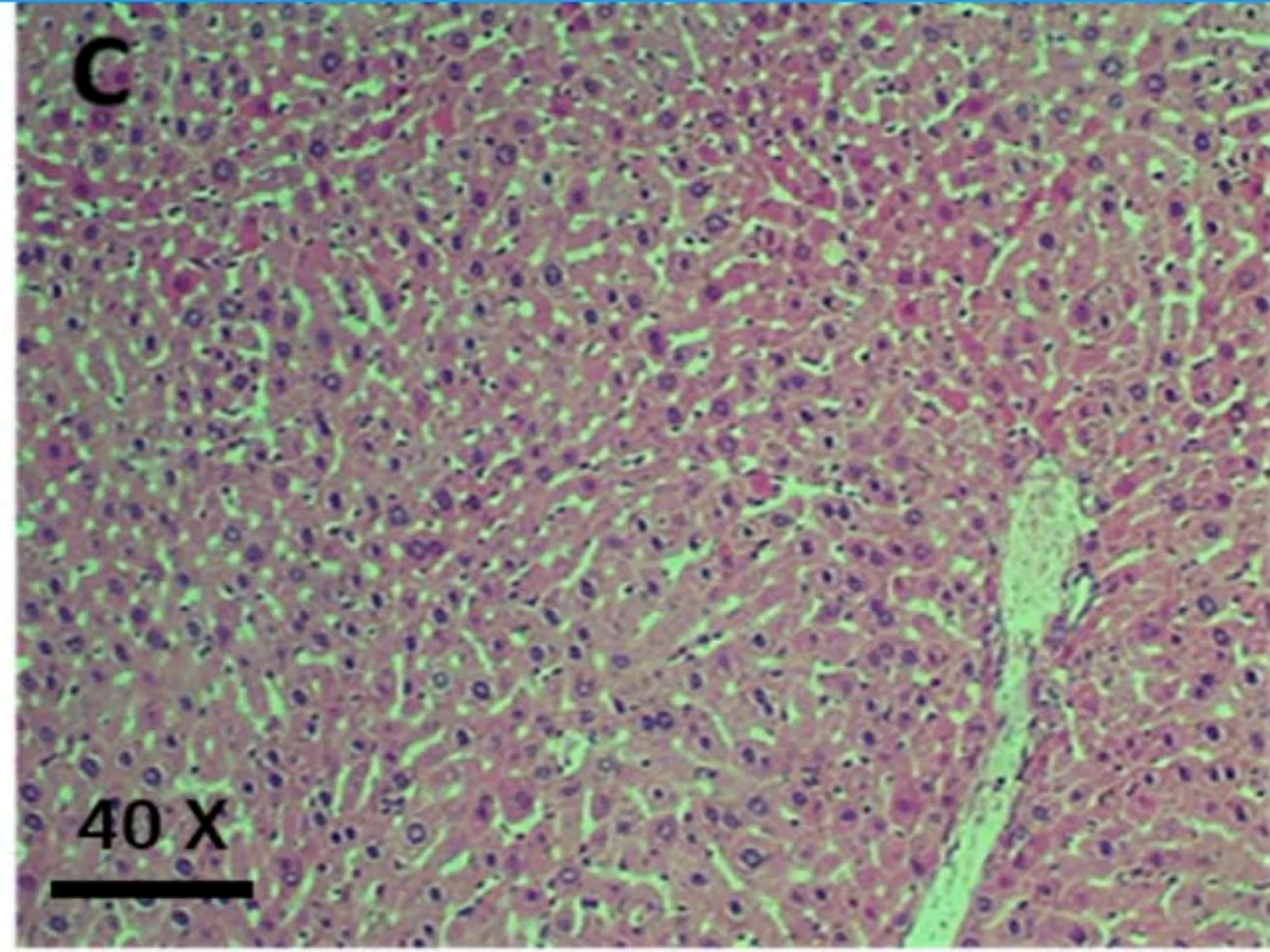
Image misconduct

Simple duplication

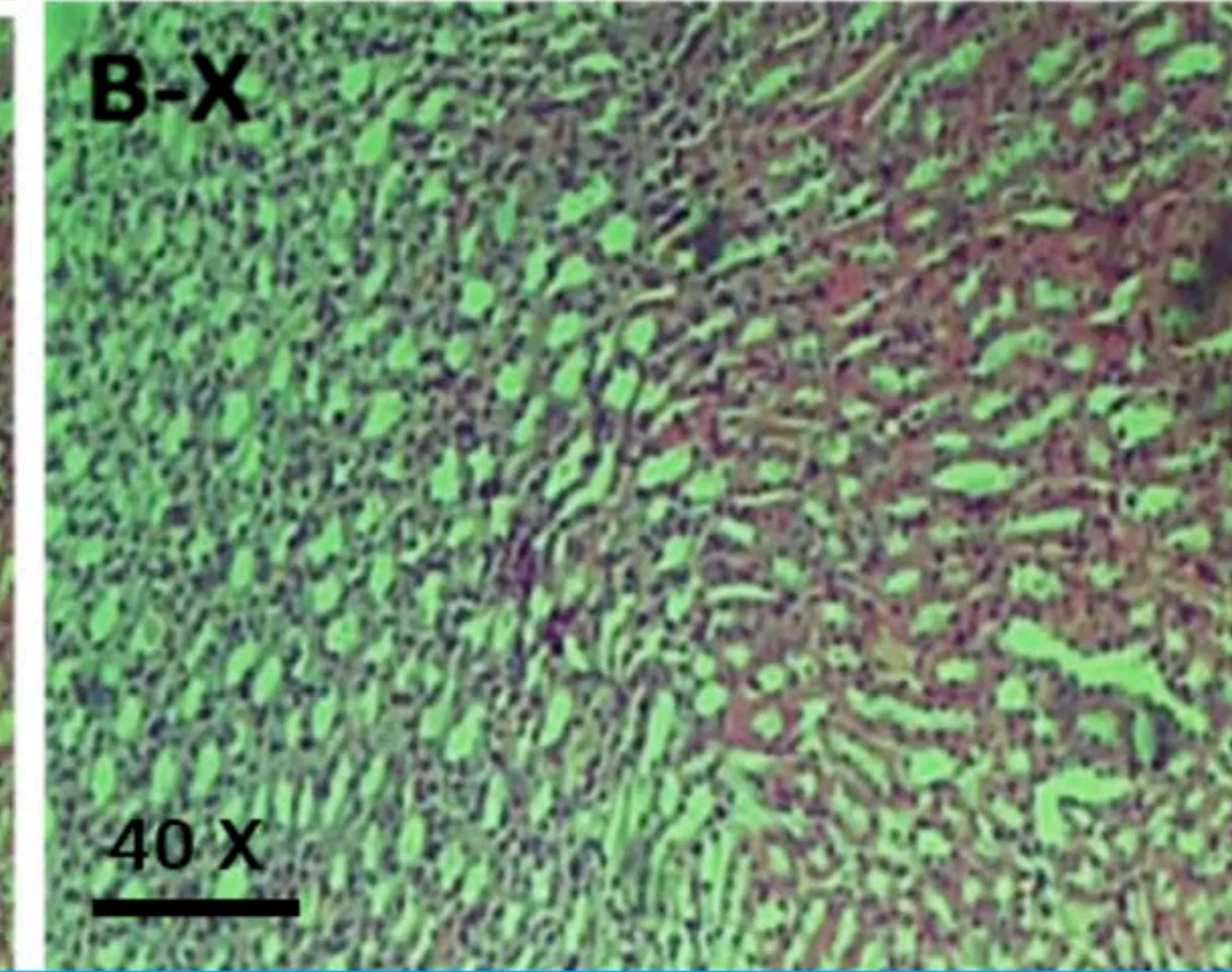
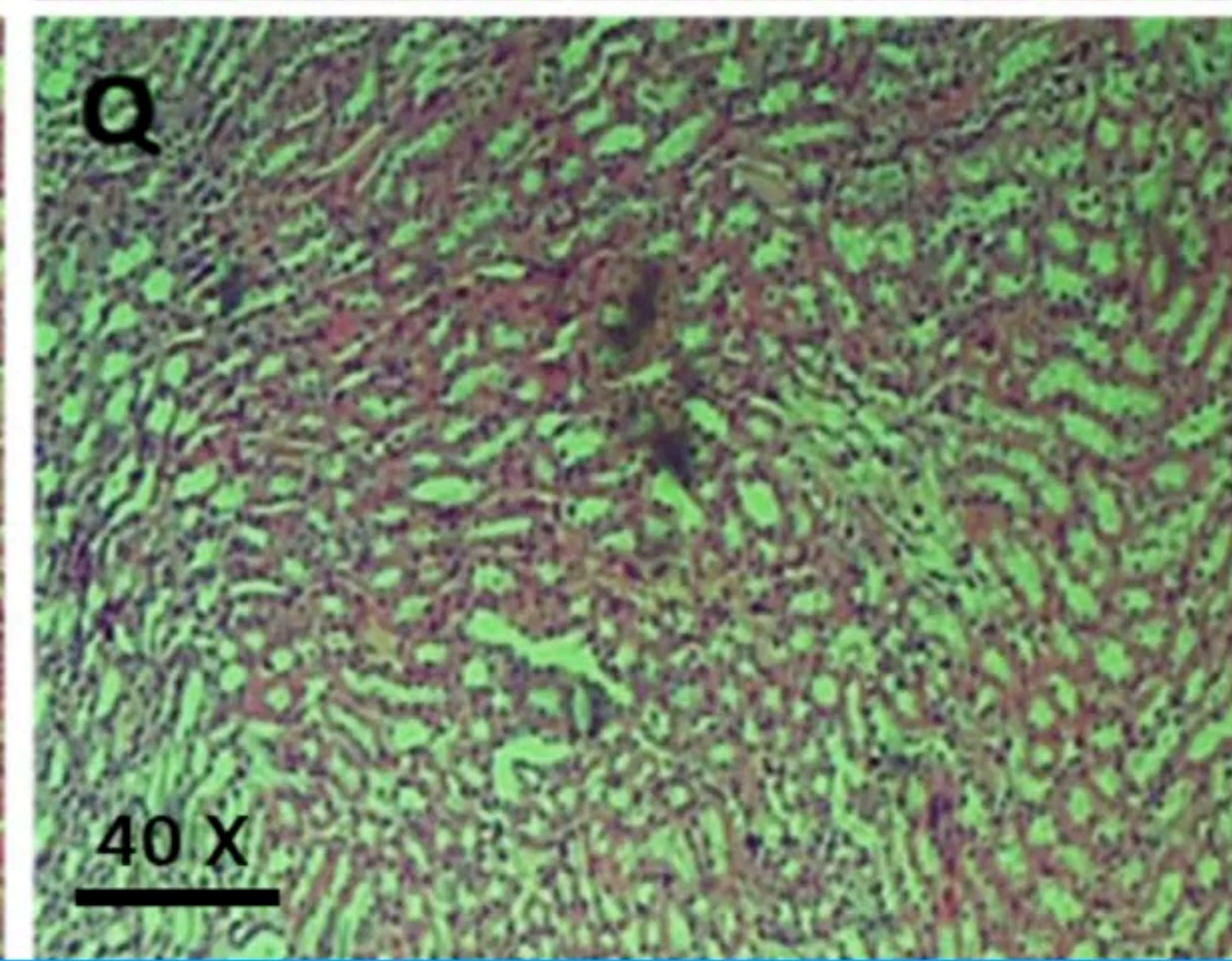
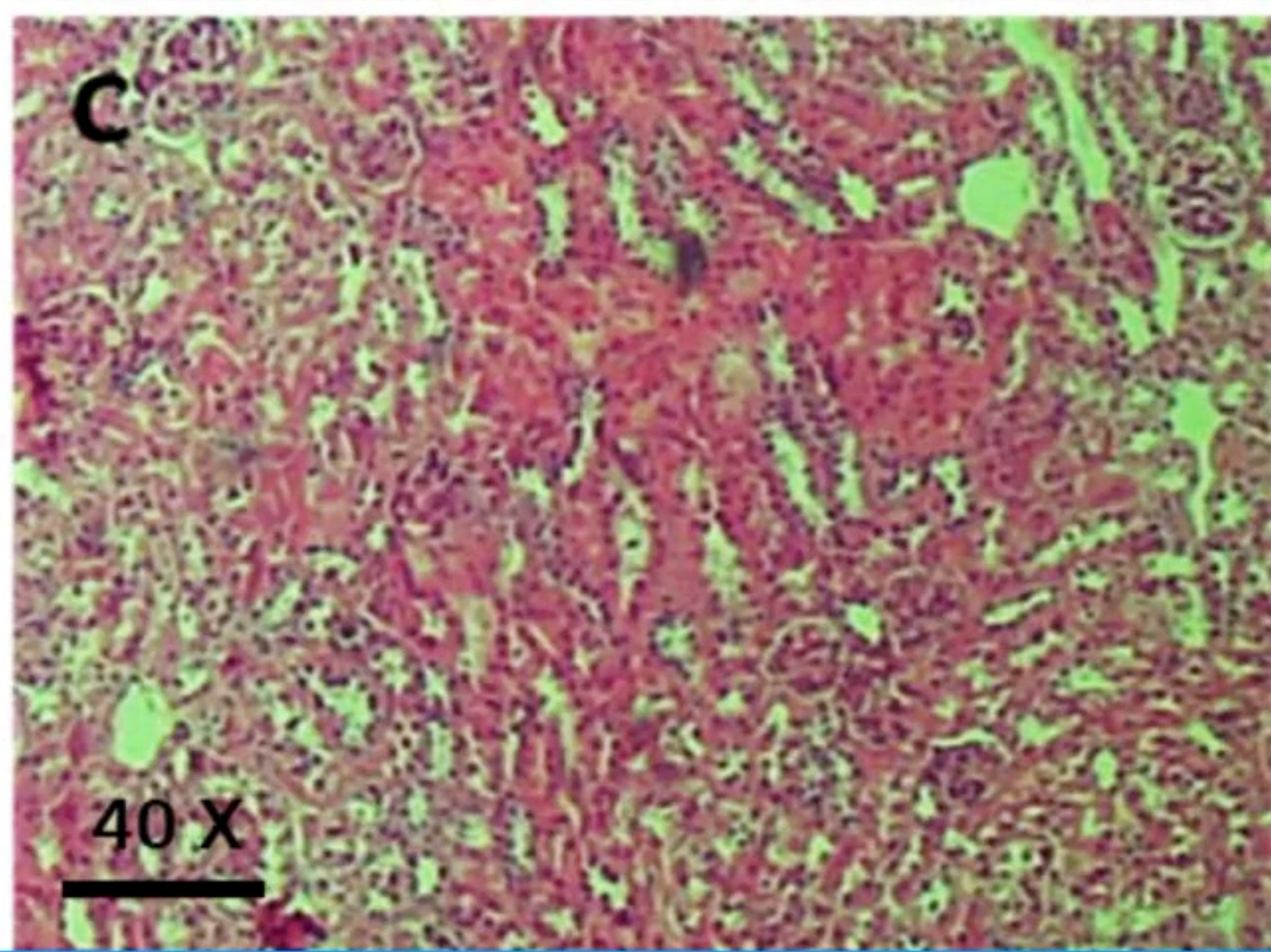


Scaling

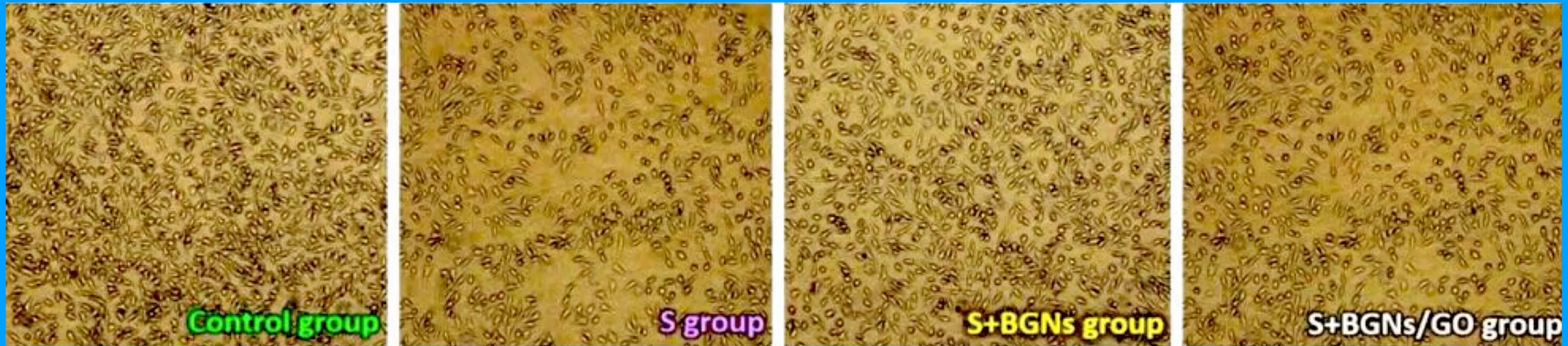
Liver



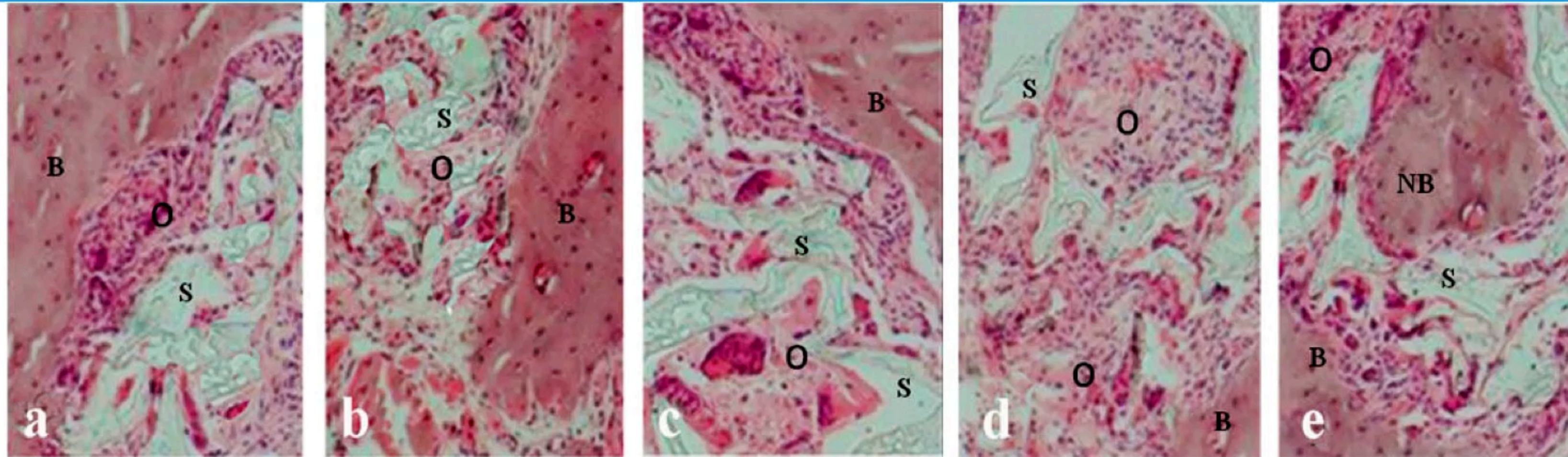
Kidney



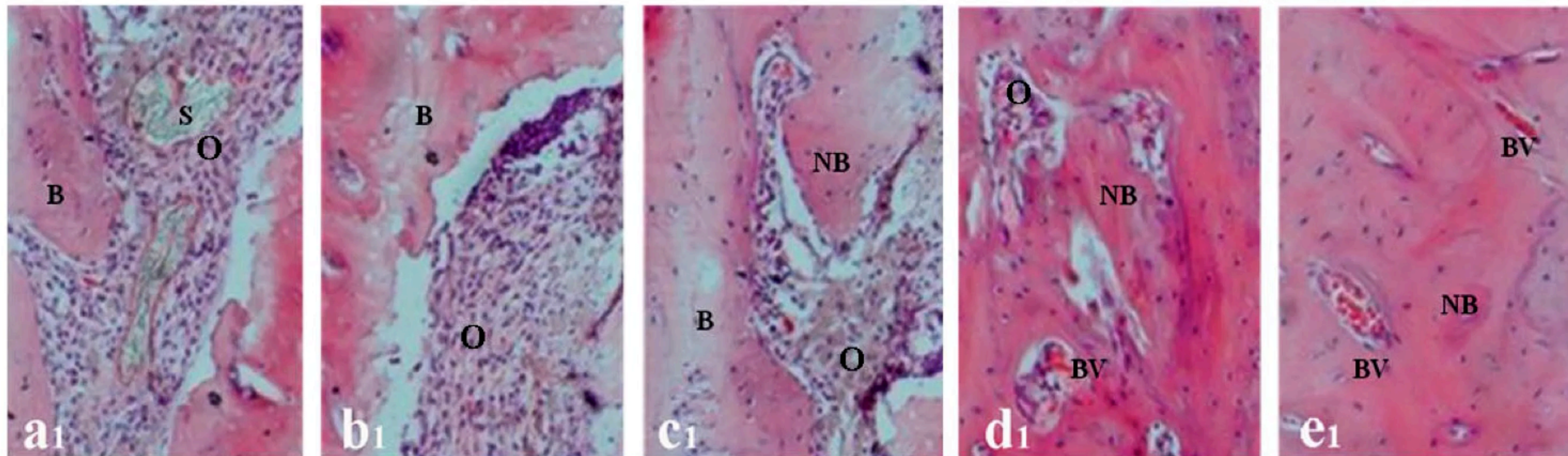
Duplication + manipulation



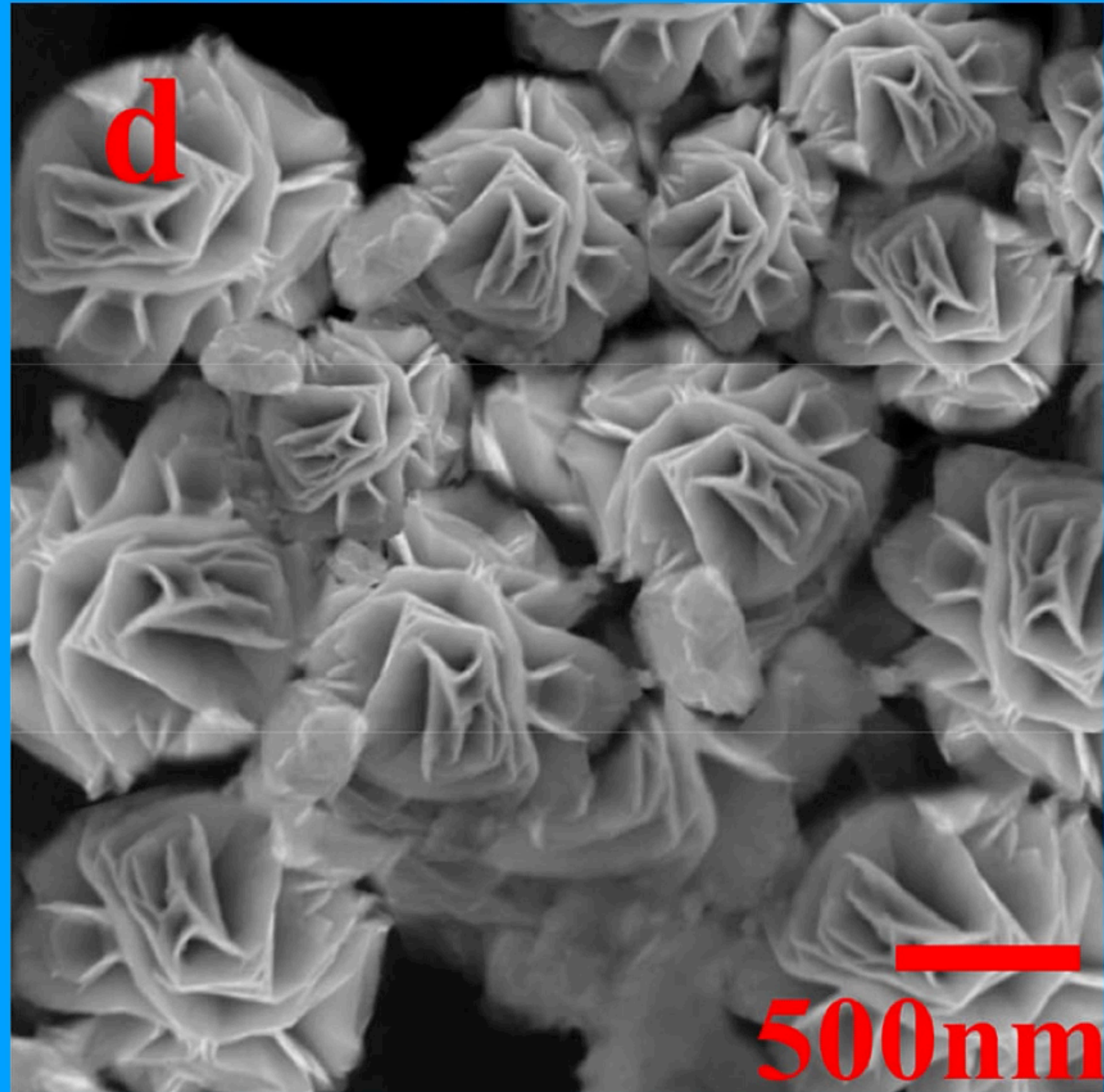
4 weeks



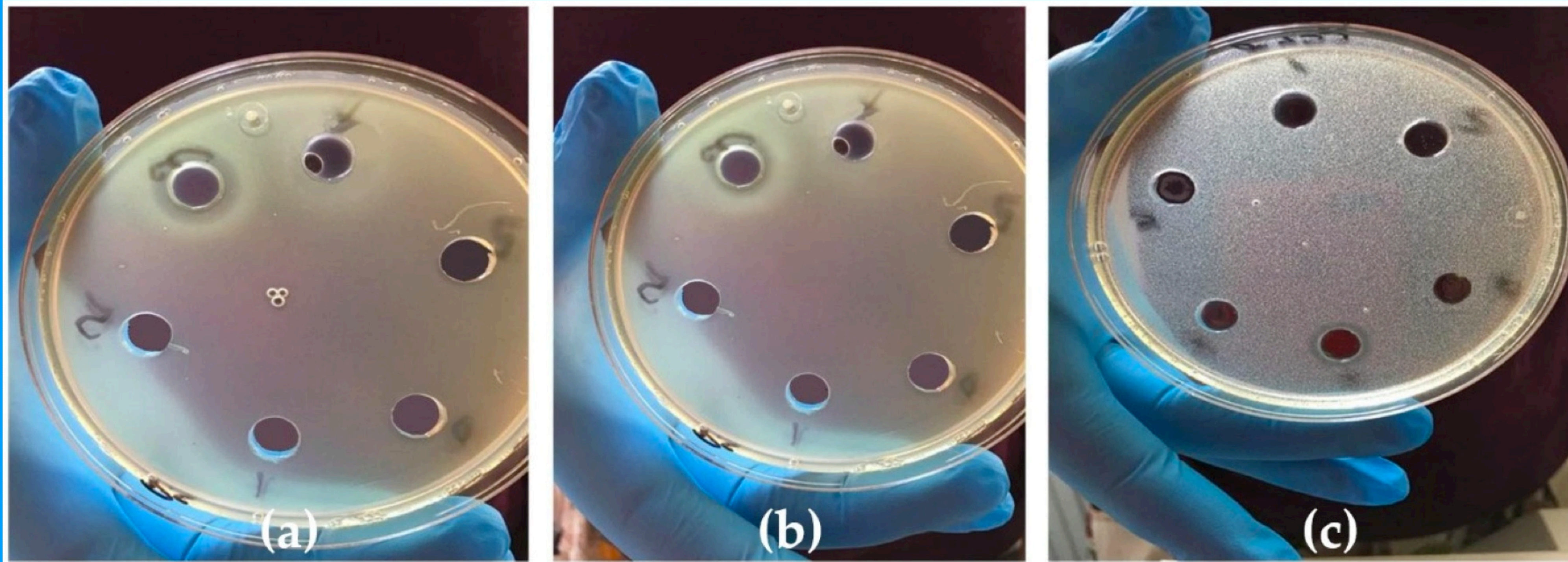
12 weeks



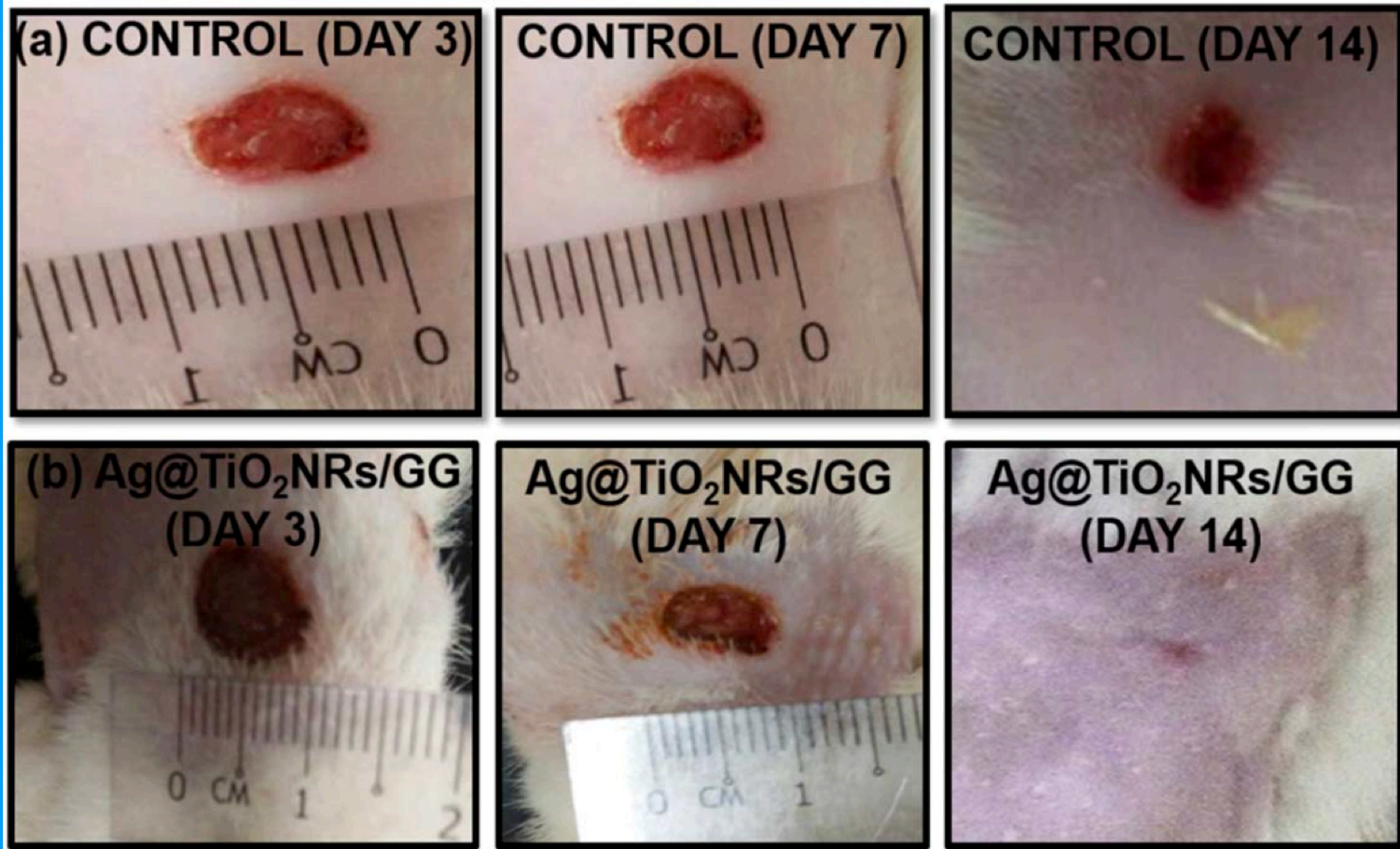
SEM images



Lab photographs



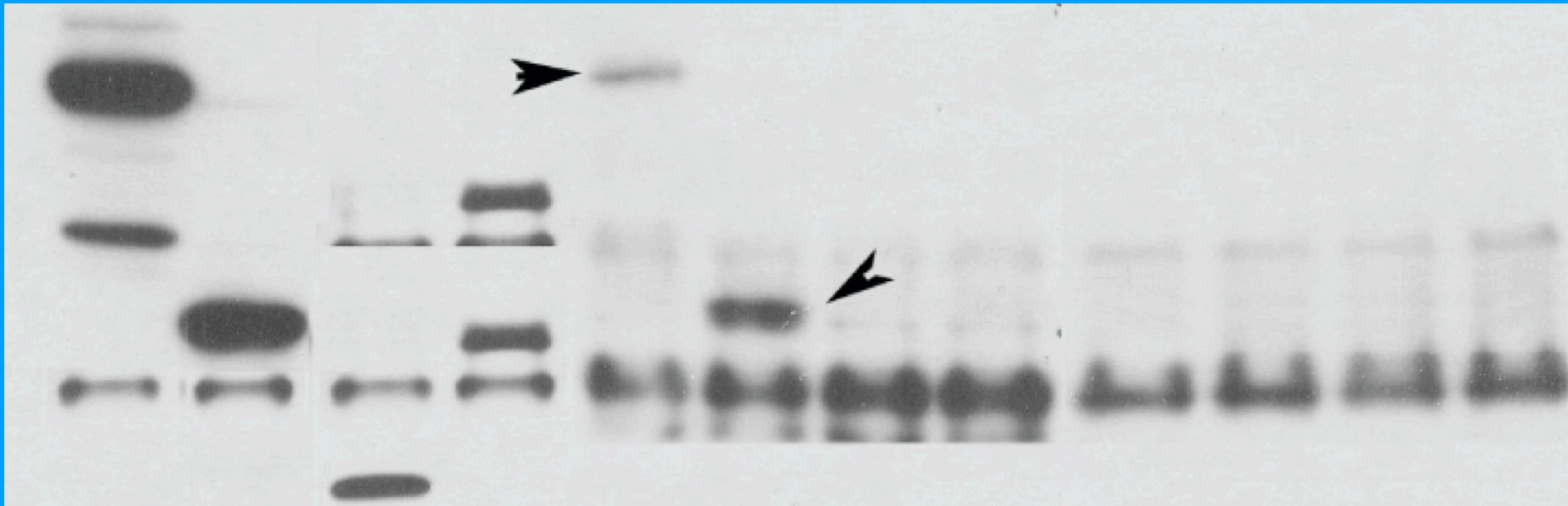
Animals



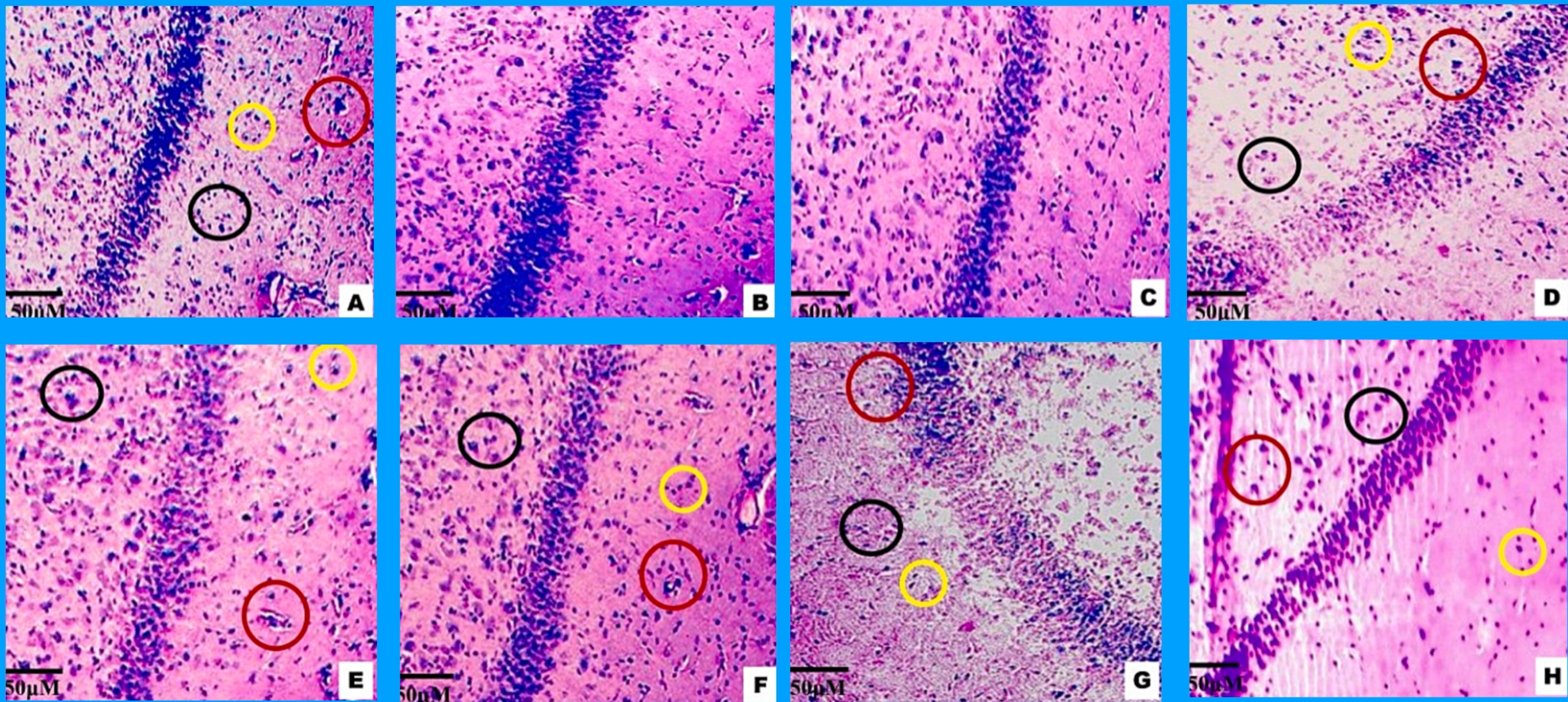
Before and after



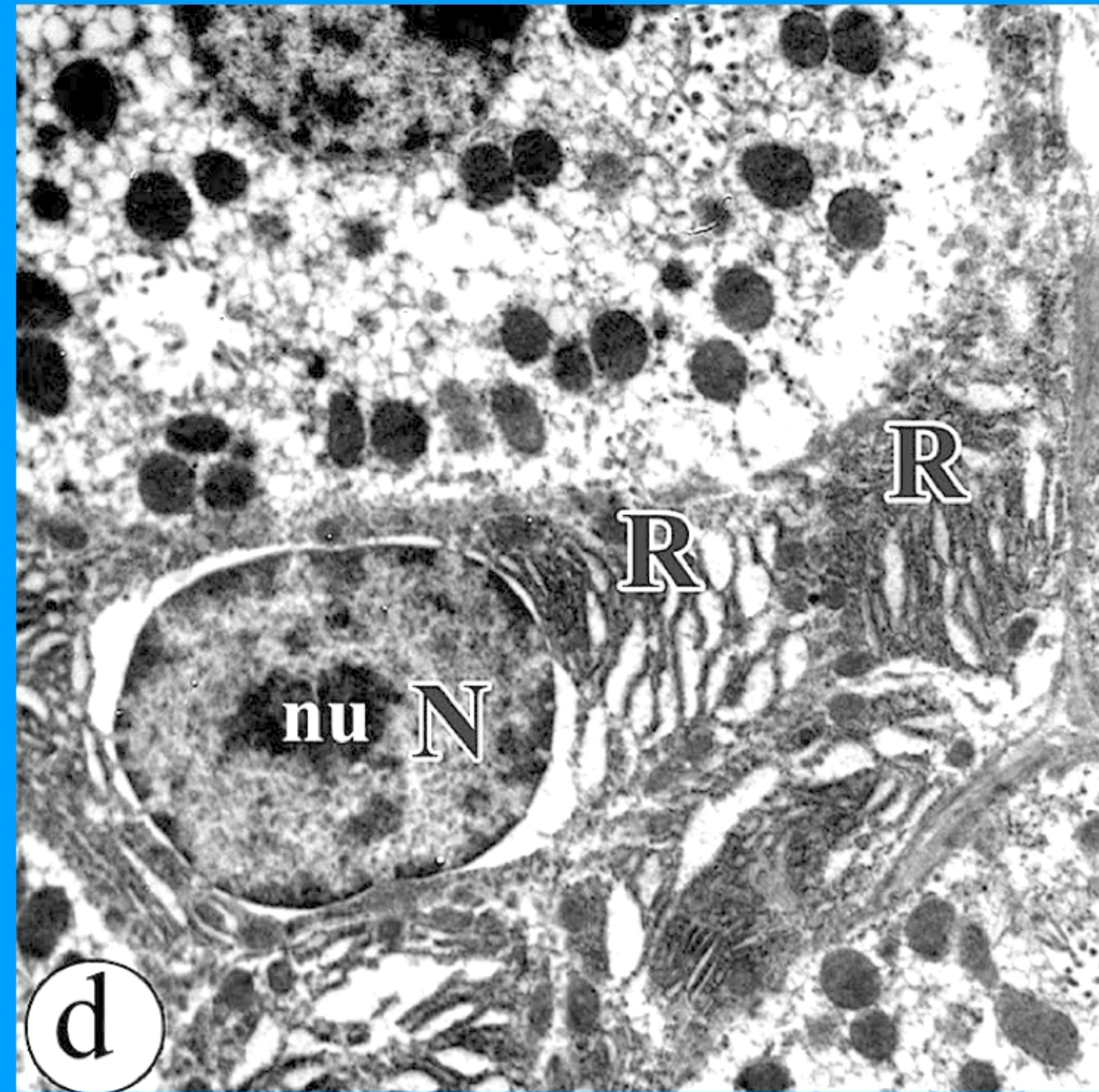
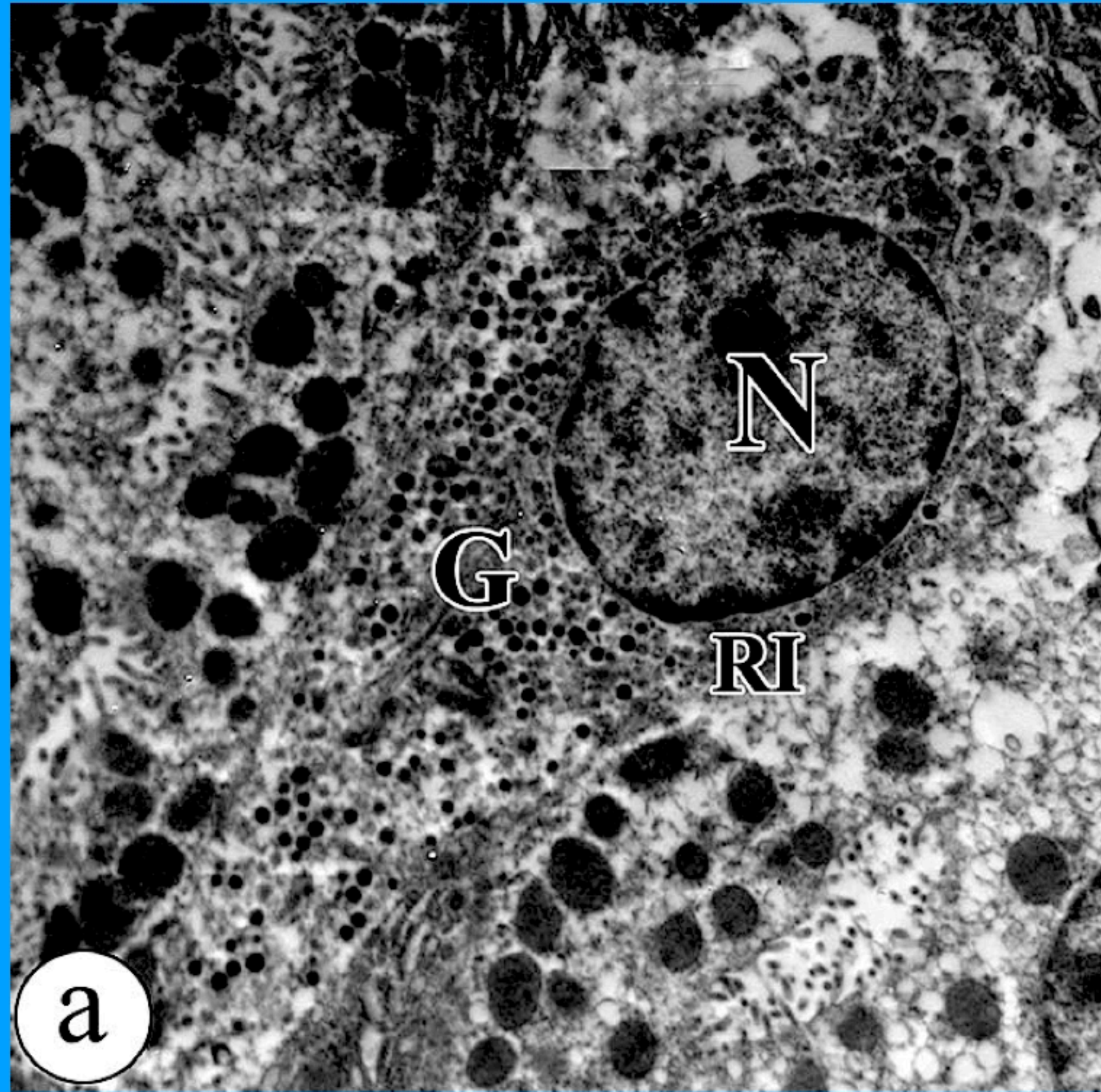
Matching background noise



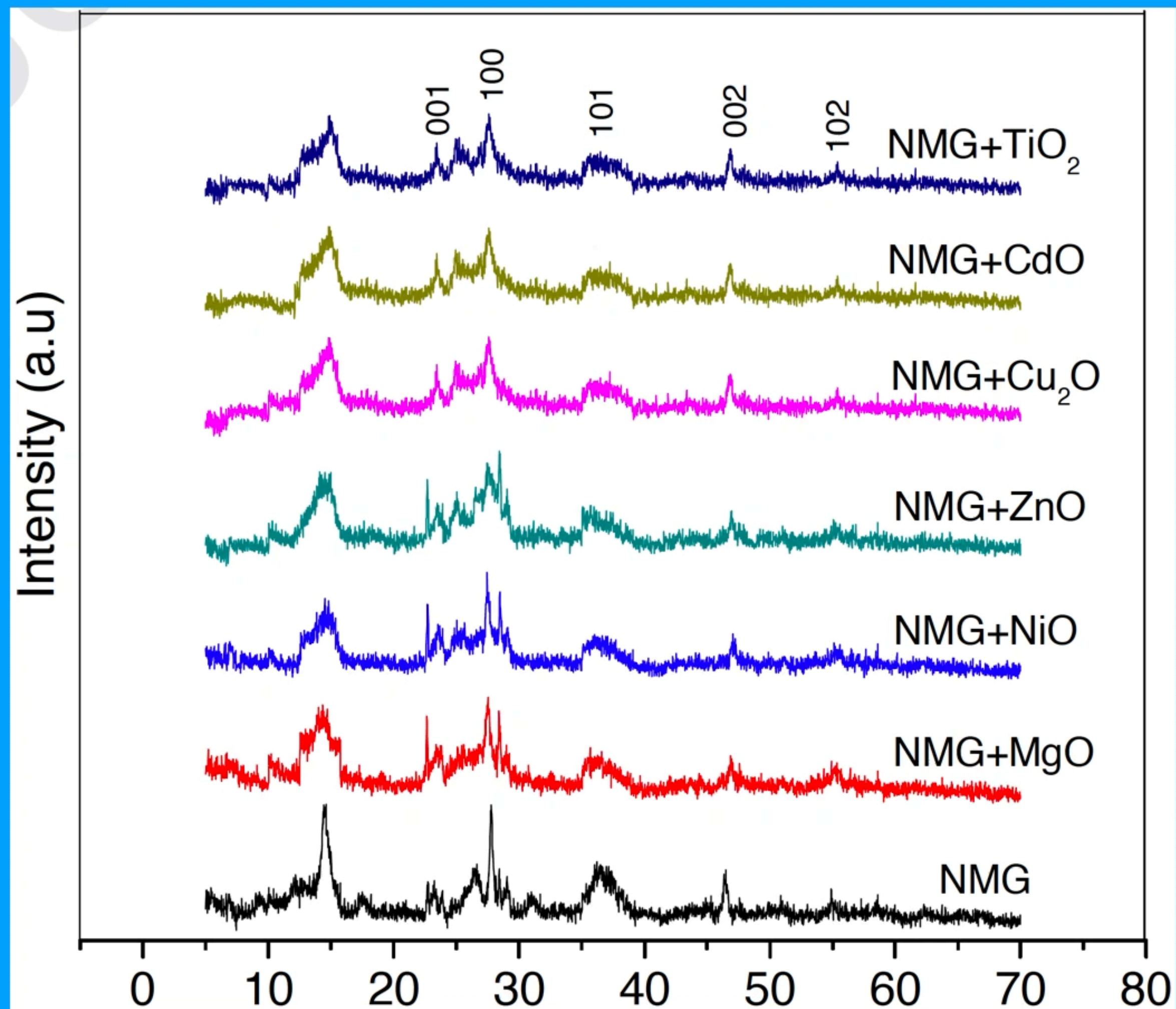
Cascading images



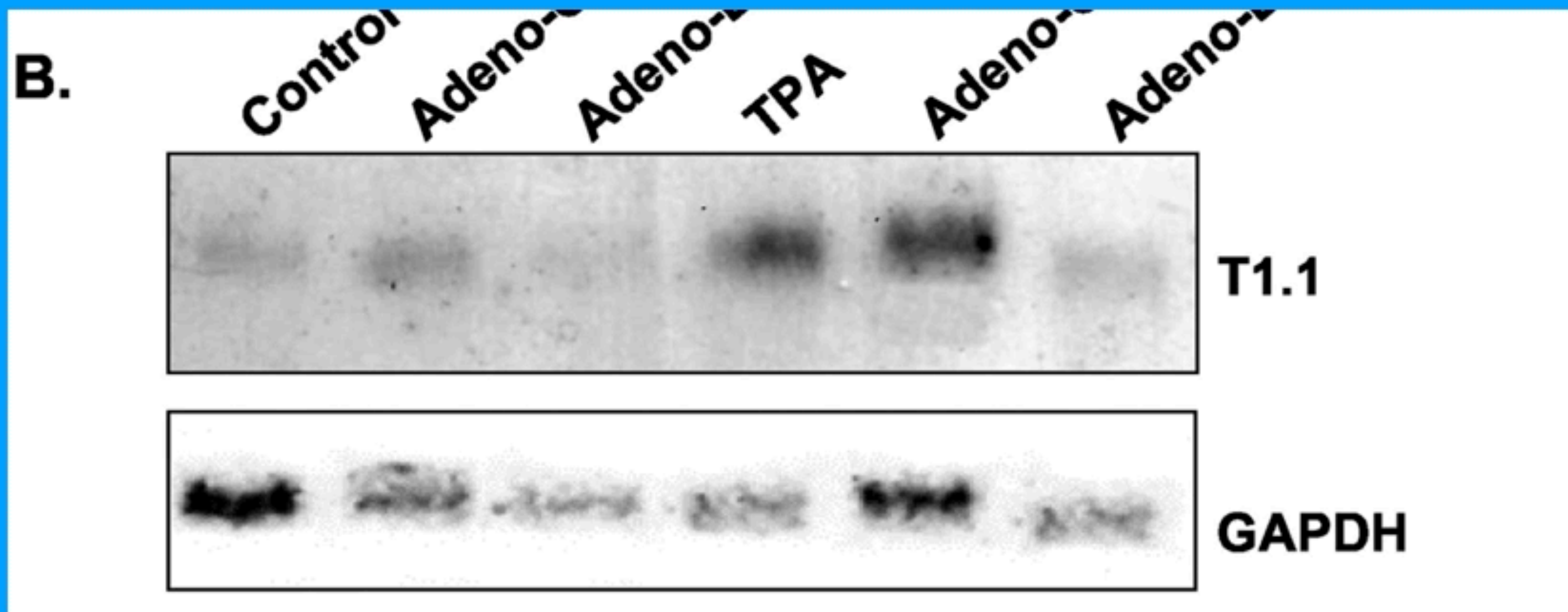
Tip of the iceberg?



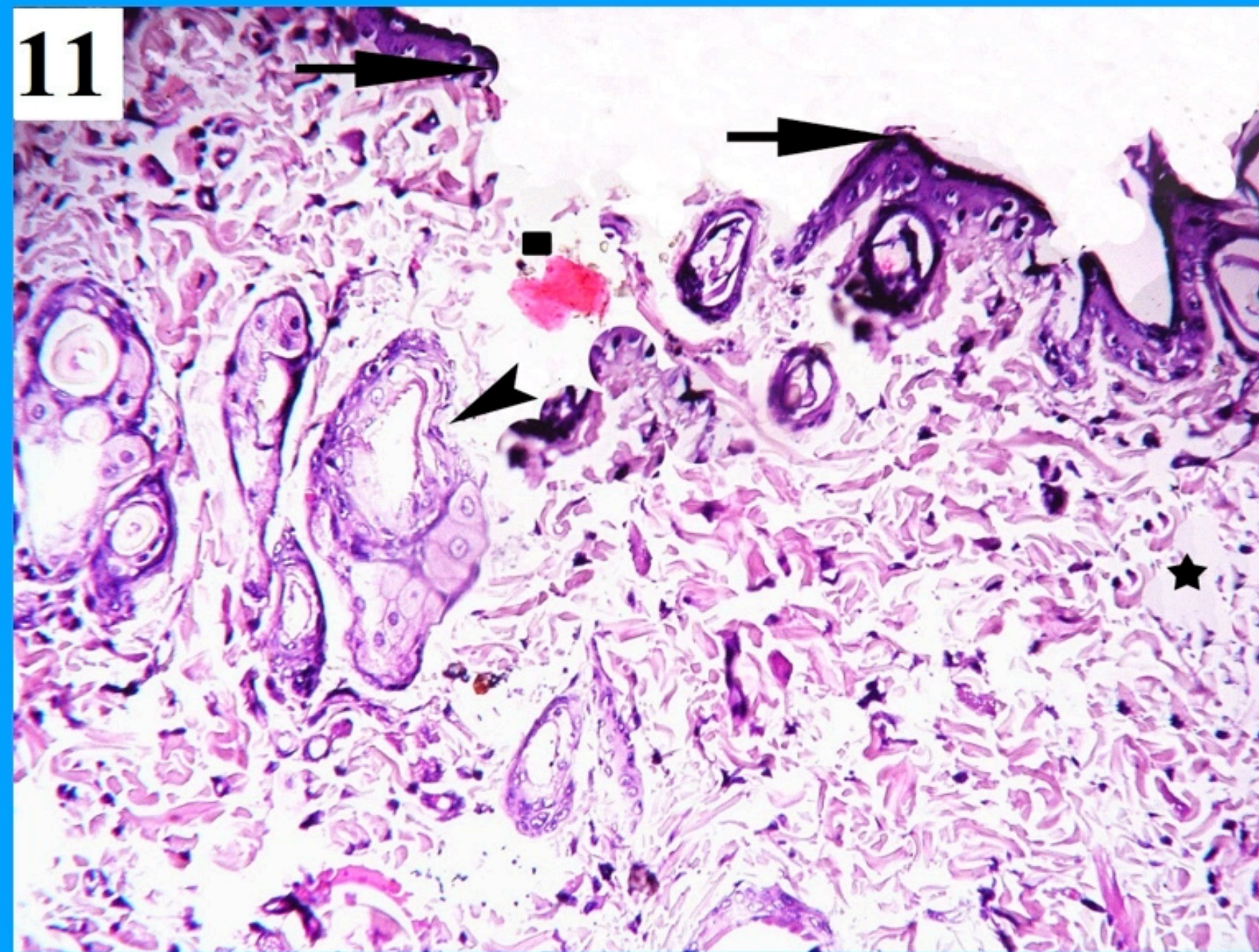
X-ray diffraction (XRD) spectra



Low resolution images



High resolution images



Generative AI



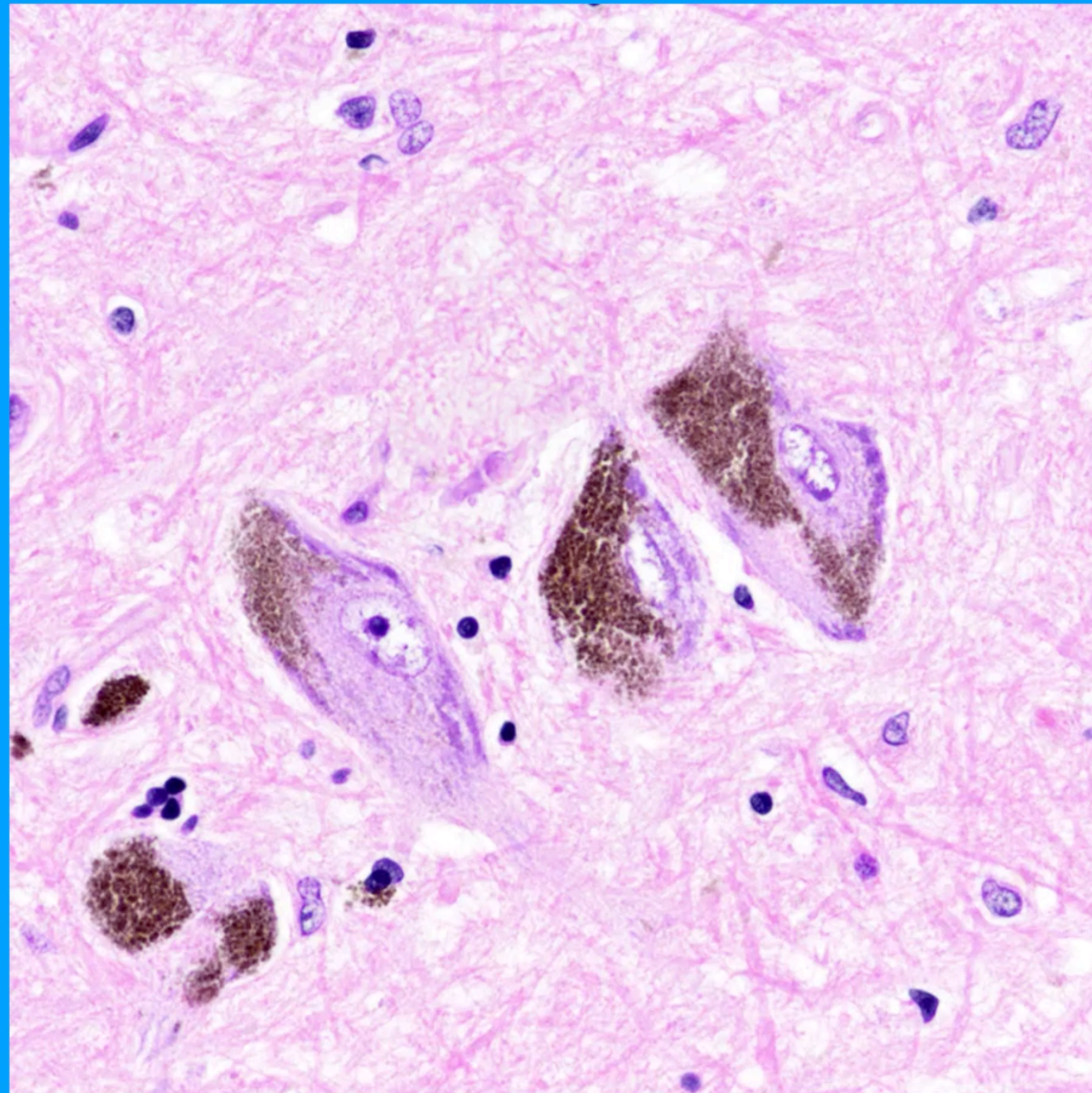
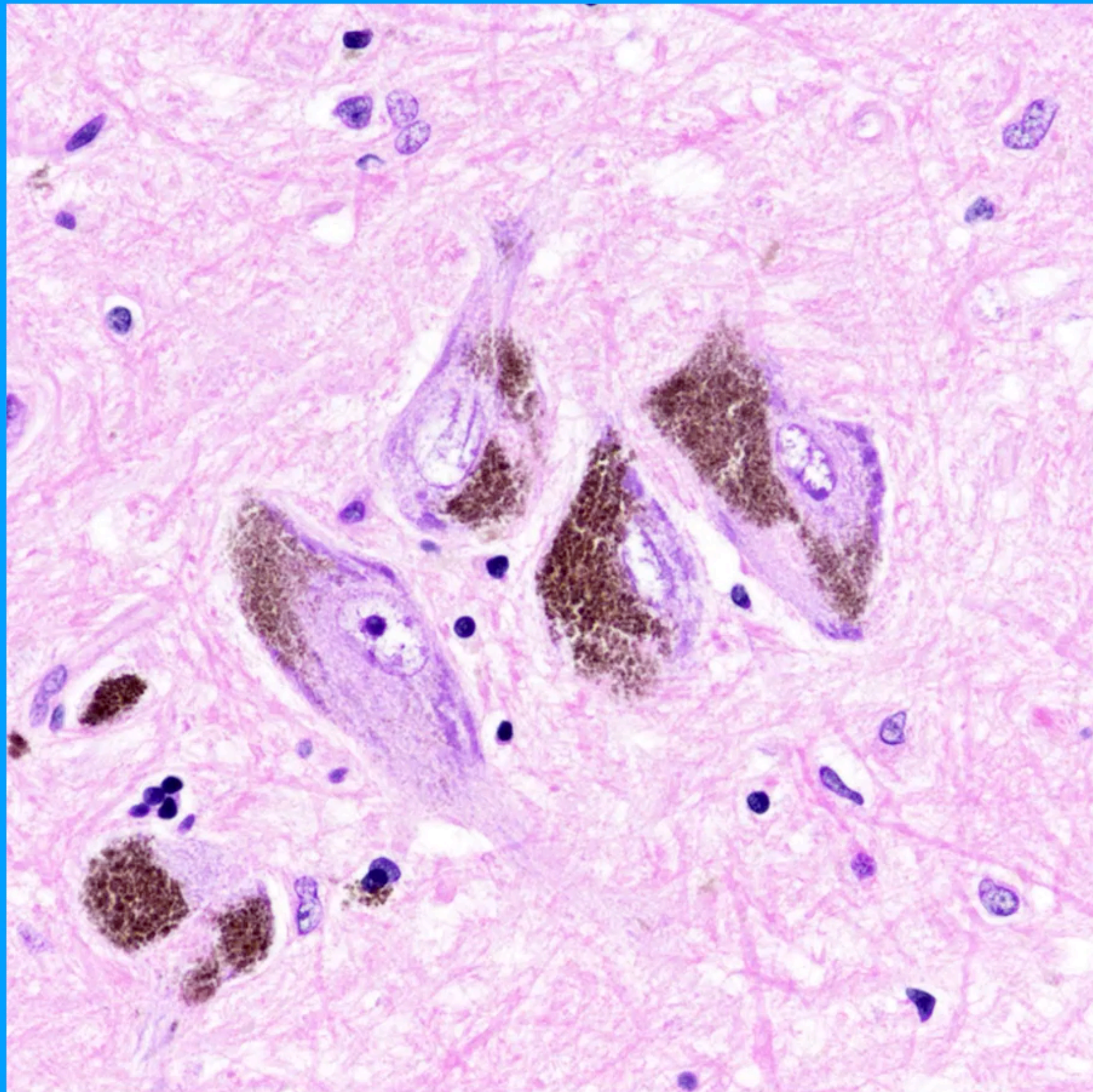
Classic car from the 50s

Reflection pool filled with blue

Cloud

Make it landscape





Craig Horbinski

@Kaveh1000

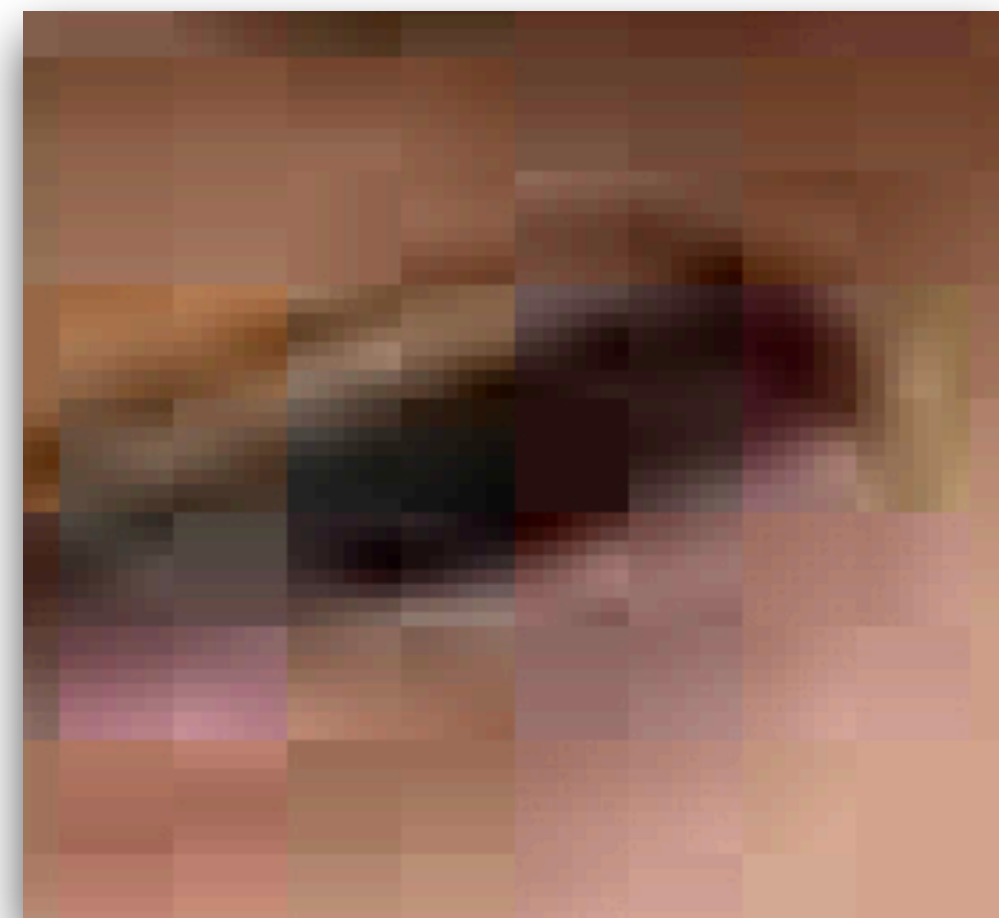
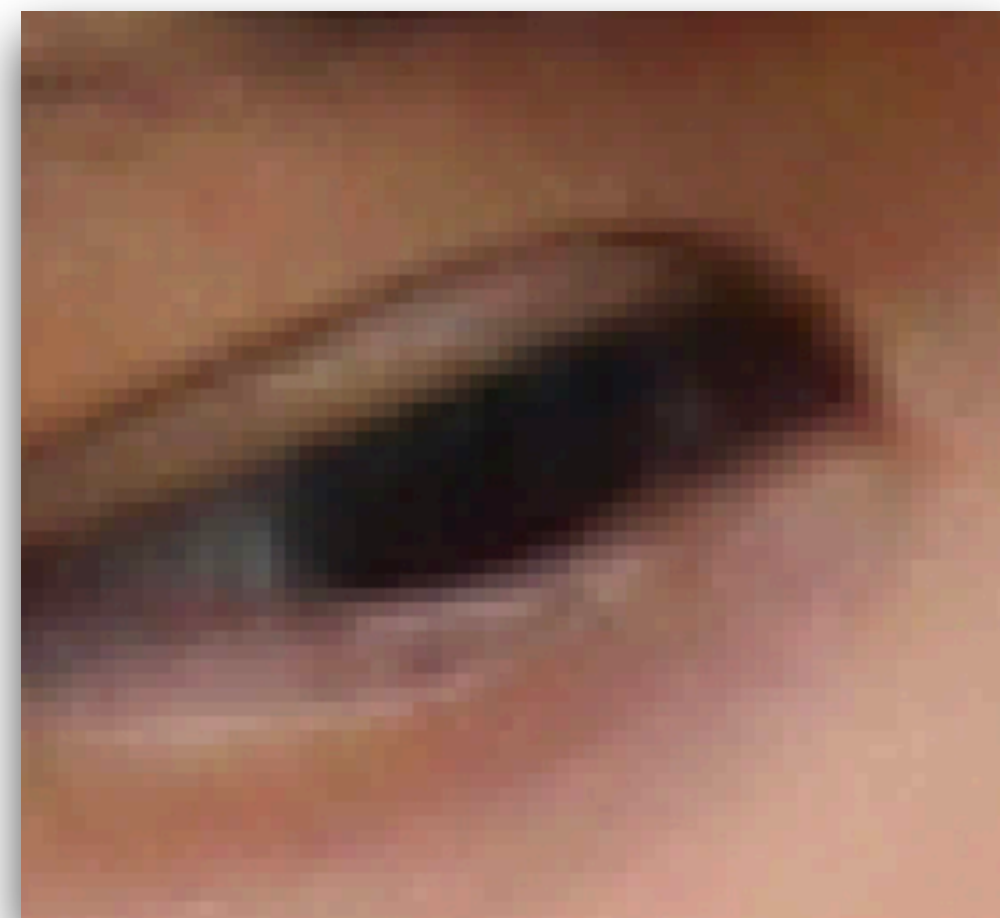
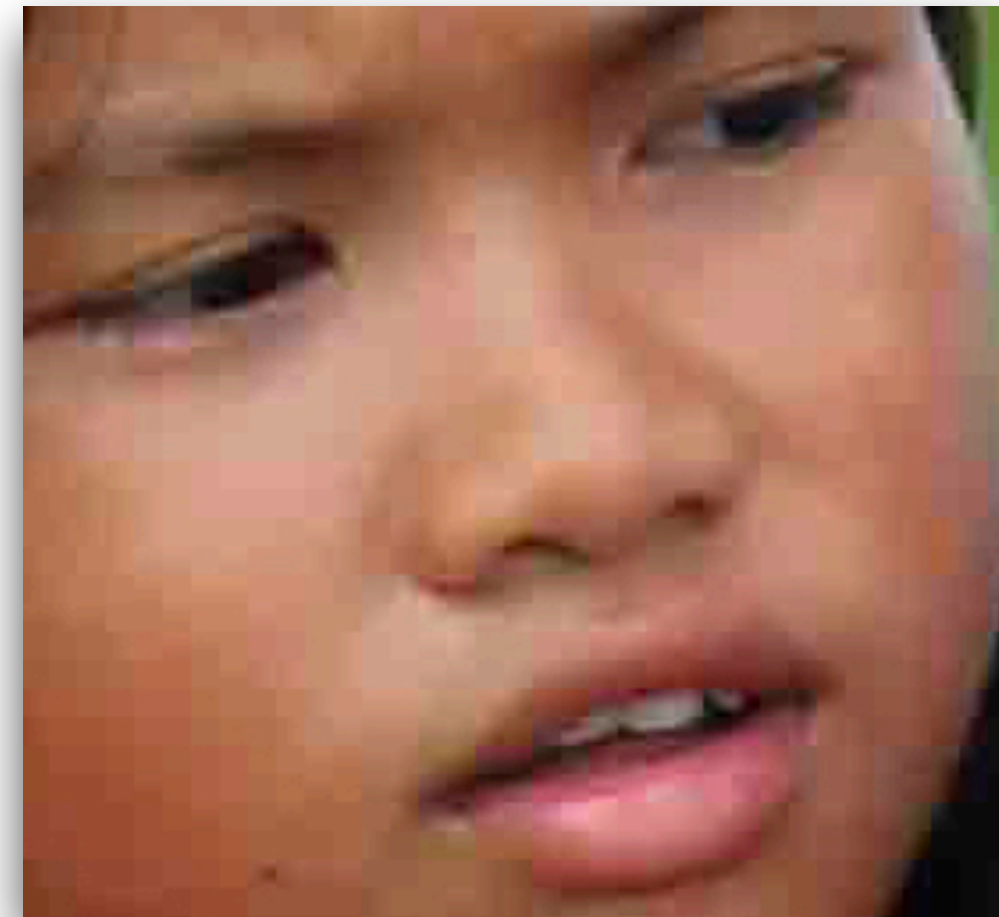
What we can do *short term*

Images

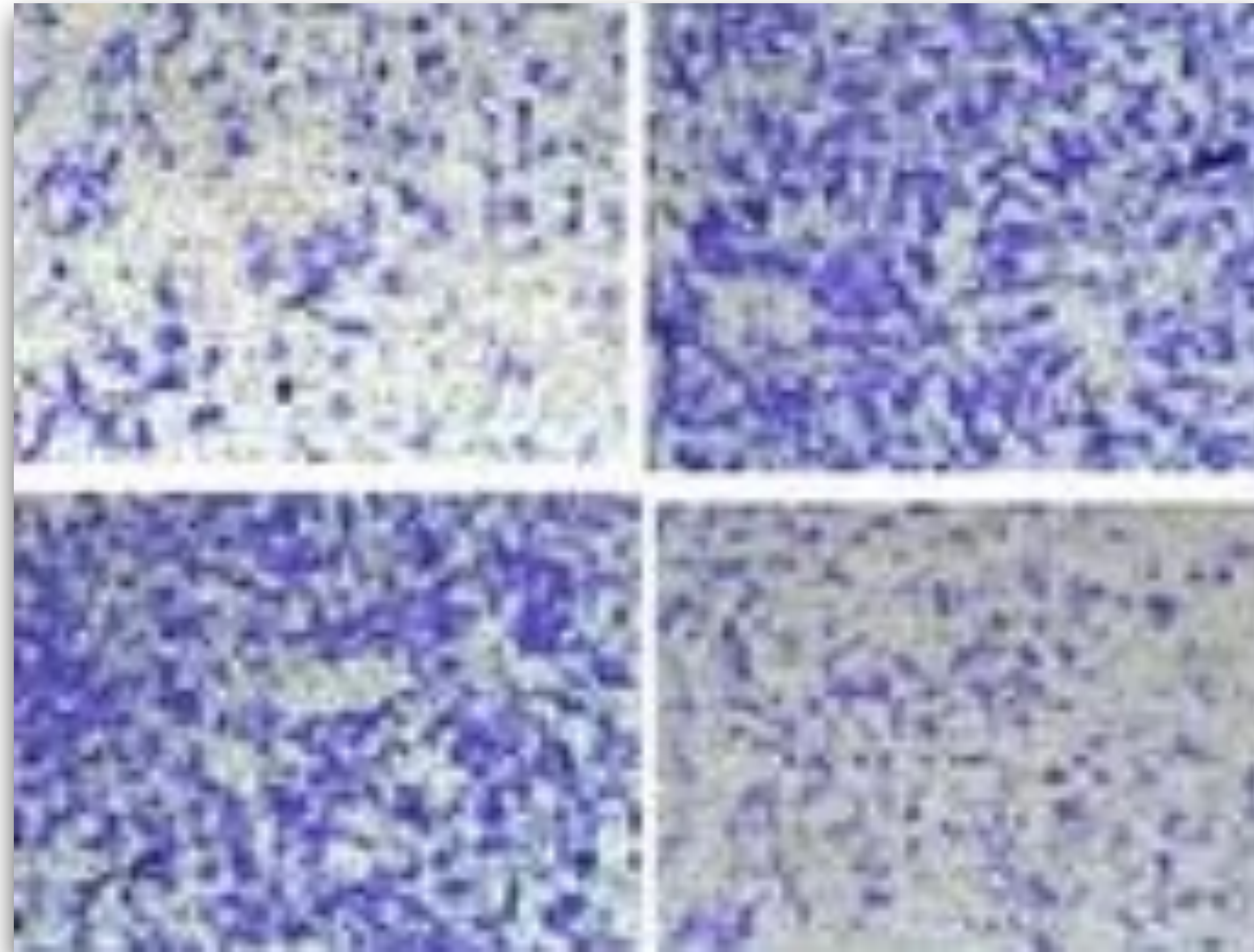
Typical file sizes

Source	File size (MB)
Selfie	2
1 minute video	10–20
1 minute animation	40
My presentation	2000
Article PDF	~2

Lossy compression (e.g. jpg)

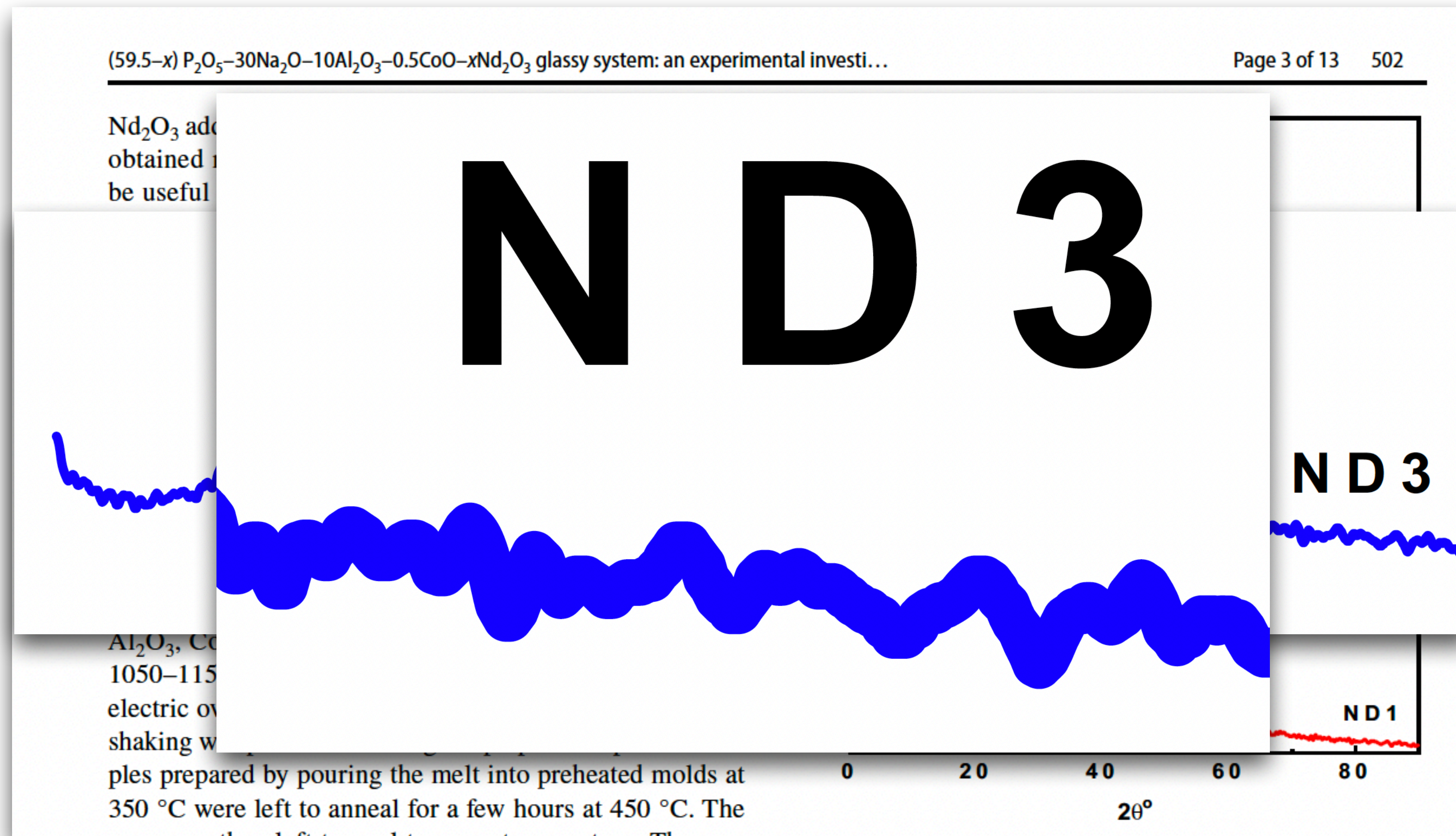


Typical low-res image



20K

Vector files



Recommendations for figures

- Use **vector files** where possible
- Demand and publish **high resolution images**
- Minimize **jpg** compression (except in photos of scenes or objects)
- Upscale PDFs from 2MB to say 50MB
 - But provide downsampled version
- Demand **original image** to be uploaded as **supplementary data**
 - No preparation (e.g. labelling) necessary

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Selected commented publications (516) (you can still see all recent comments here)

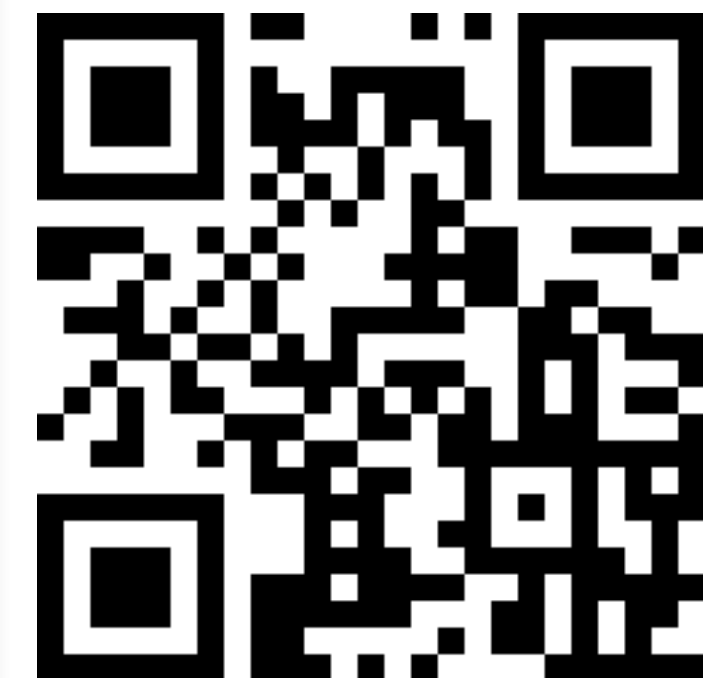
4
minutes
ago

Room temperature colossal superparamagnetic order in aminoferrocene-graphene molecular magnets


Yohannes W. Getahun, Felicia S. Manciu, Mark R. Pederson, Ahmed A. El-Gendy

Applied Physics Letters (2023)

1 comment









PubPeer extension

 "Room temperature colossal superparamagnetic order in aminoferrocene–graphene molecular magnets" has comments on PubPeer ×

RESEARCH ARTICLE | JUNE 12 2023

Room temperature colossal superparamagnetic order in aminoferrocene–graphene molecular magnets



Yohannes W. Getahun  ; Felicia S. Manciu  ; Mark R. Pederson  ;
Ahmed A. El-Gendy  


 Check for updates

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Appl. Phys. Lett. 122, 241903 (2023)

<https://doi.org/10.1063/5.0153212>

 1 comment on PubPeer (by: Chondromyces Apiculatus) Article history 



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Maximize metadata

- Mandate **ORCID?**
- NISO **CRedit** taxonomy
- **Crossref Funder Registry** (soon to be replaced by **ROR**)
 - and **Grant PID** when available
- Submission date
 - Good indicator for analysis
 - Currently no consistent way to fetch data

Dealing with alleged misconduct

- Do not delay **Correction, Expression of concern, or Retraction**
- Set deadline for responses from author or institution
- Use standard post-publication metadata for **Correction, etc**
 - Crossref keen to help with this

Institutions

- Take more responsibility in regards affiliated authors
- Have a Research Integrity officer
- respond quickly

What we can do *long term*

Structure documents at submission

- Author can modify to ensure structure is correct
- Saves time and money downstream as we have XML at start
- Structured references makes it easier to detect misconduct

Contextual peer review

- Reviewers annotate selected text
- Easier to spot repetitive peer review
- Allows granular analysis of reviewer actions

Granular document structure

- Just as DOI in PDF links to a reference
 - Figures link to original figure with metadata (e.g. Exif data)
 - Graph links directly to original data
- Harder to put in copied assets