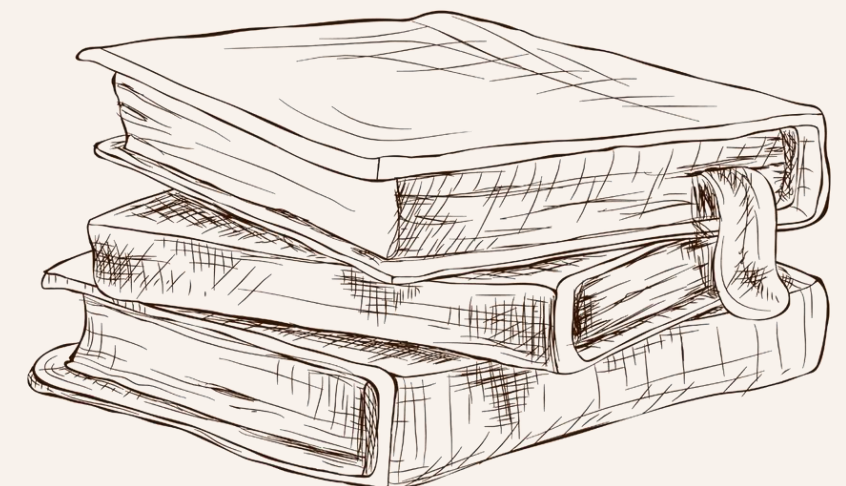
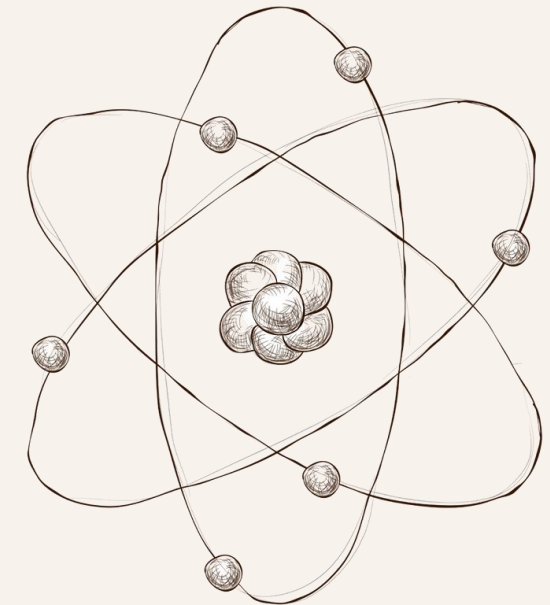
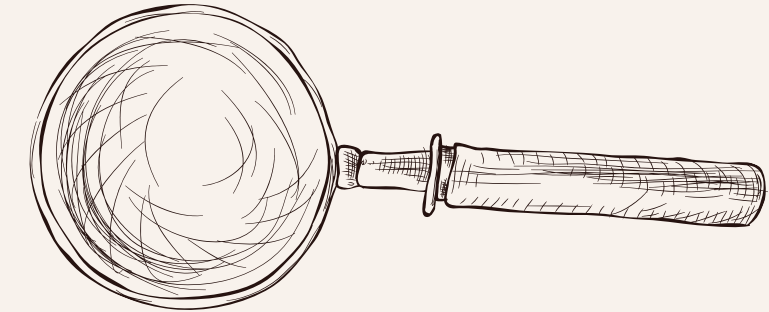




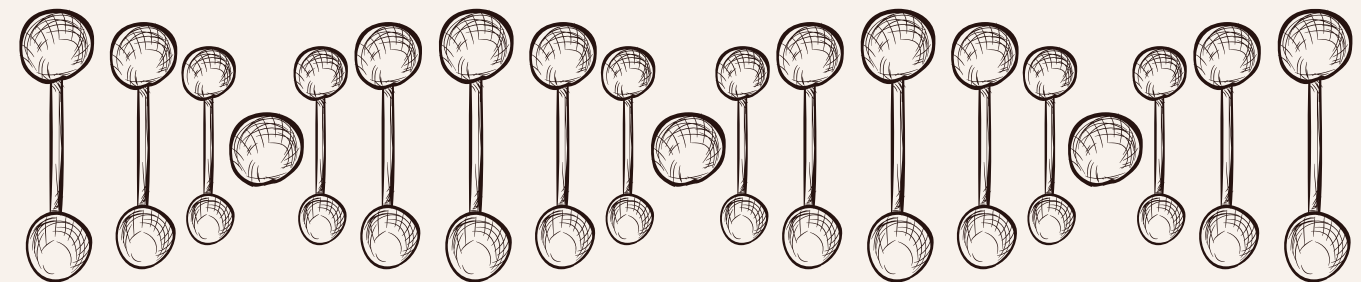
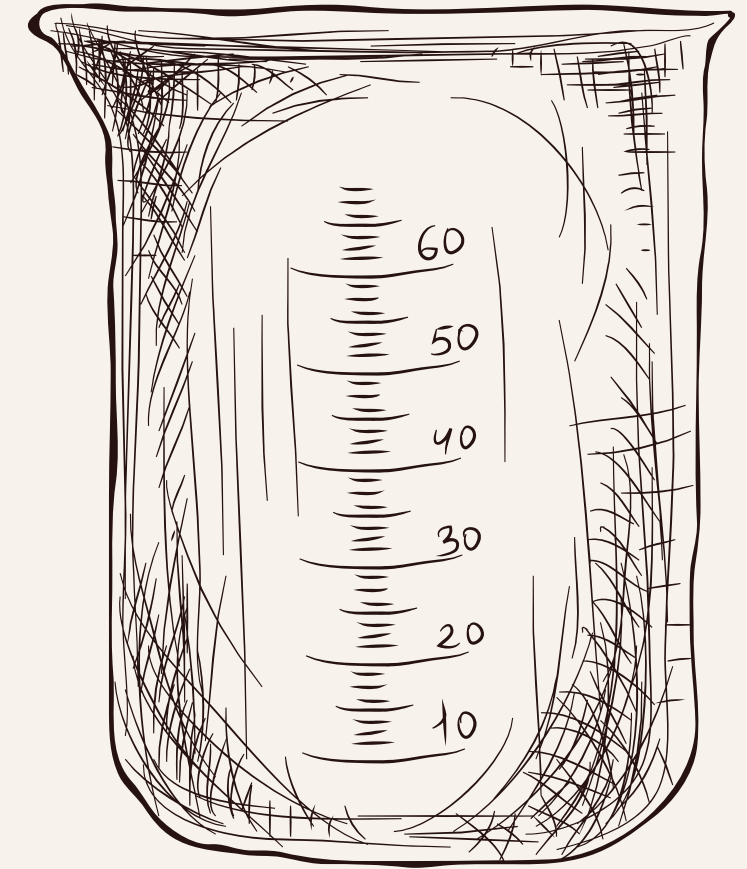
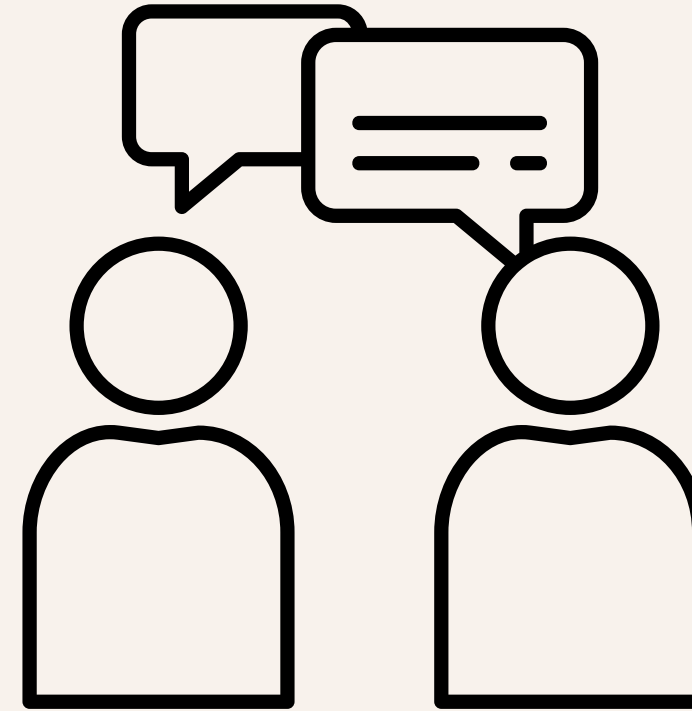
# **CELL CULTURING TECHNIQUES AND COMPARATIVE STUDIES: SEEKING UNDERSTANDING AND DISSEMINATING FINDINGS**

**Camryn Couvillion  
Qi Lab  
Massachusetts Institute of Technology (MIT)**

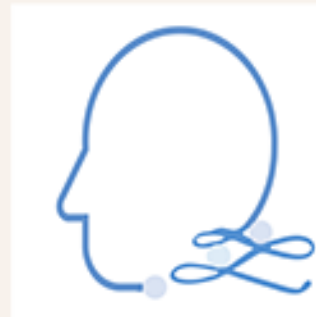


# Science Influencers Program

- Science communication
- Social media

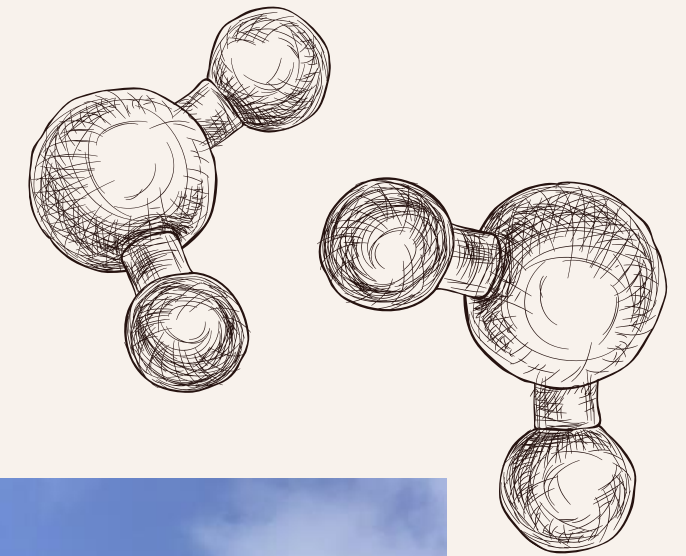






# Qi Research Group

Complex Fluids & Soft Matter For Health





# Getting Started

01

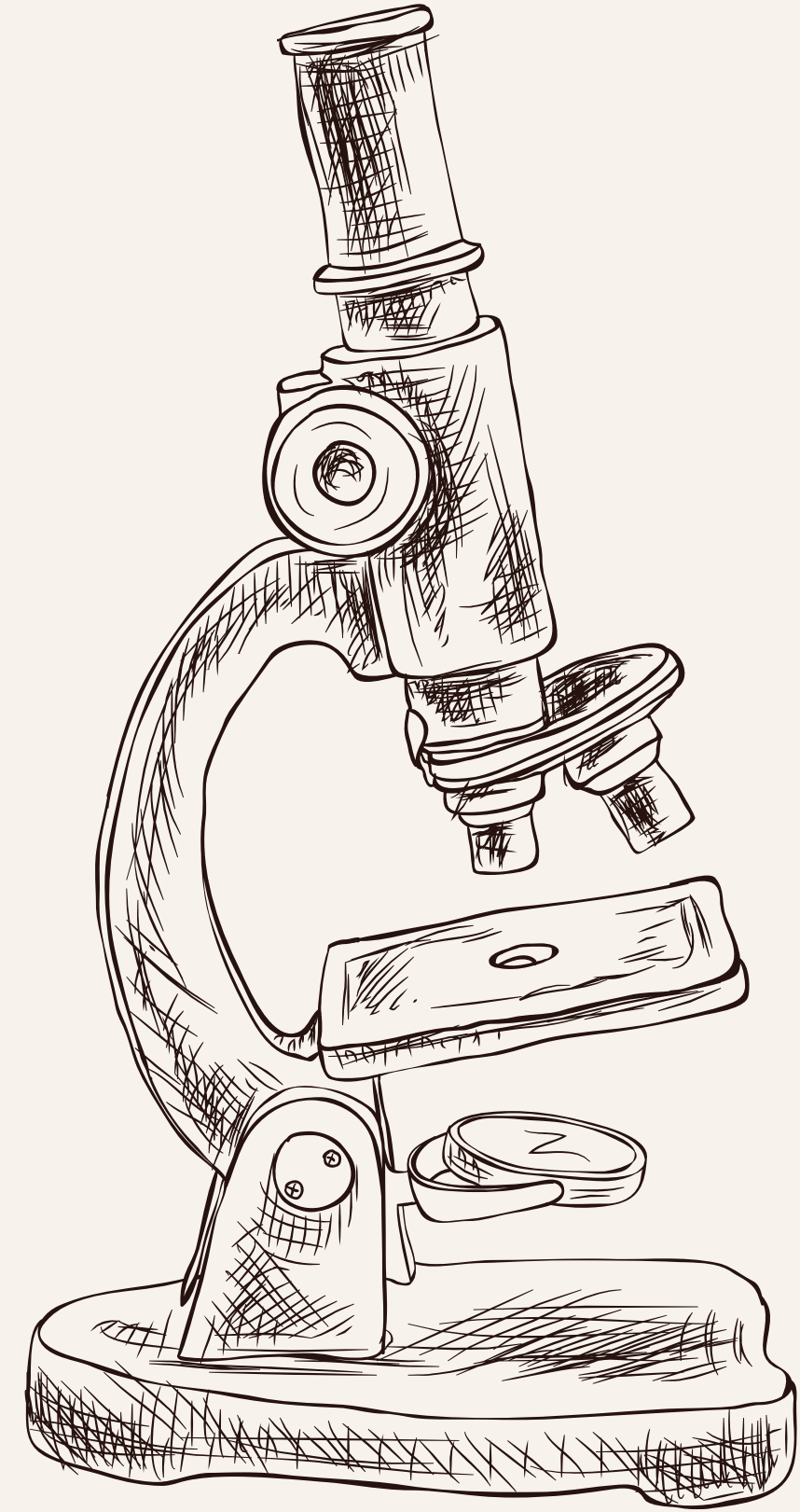
Observe the methods in action

02

Develop a protocol

03

Practice with my personal protocol- derived from literature and notes



# Training



(Thermo Fischer,  
2023)

- L cells
- Success redefined

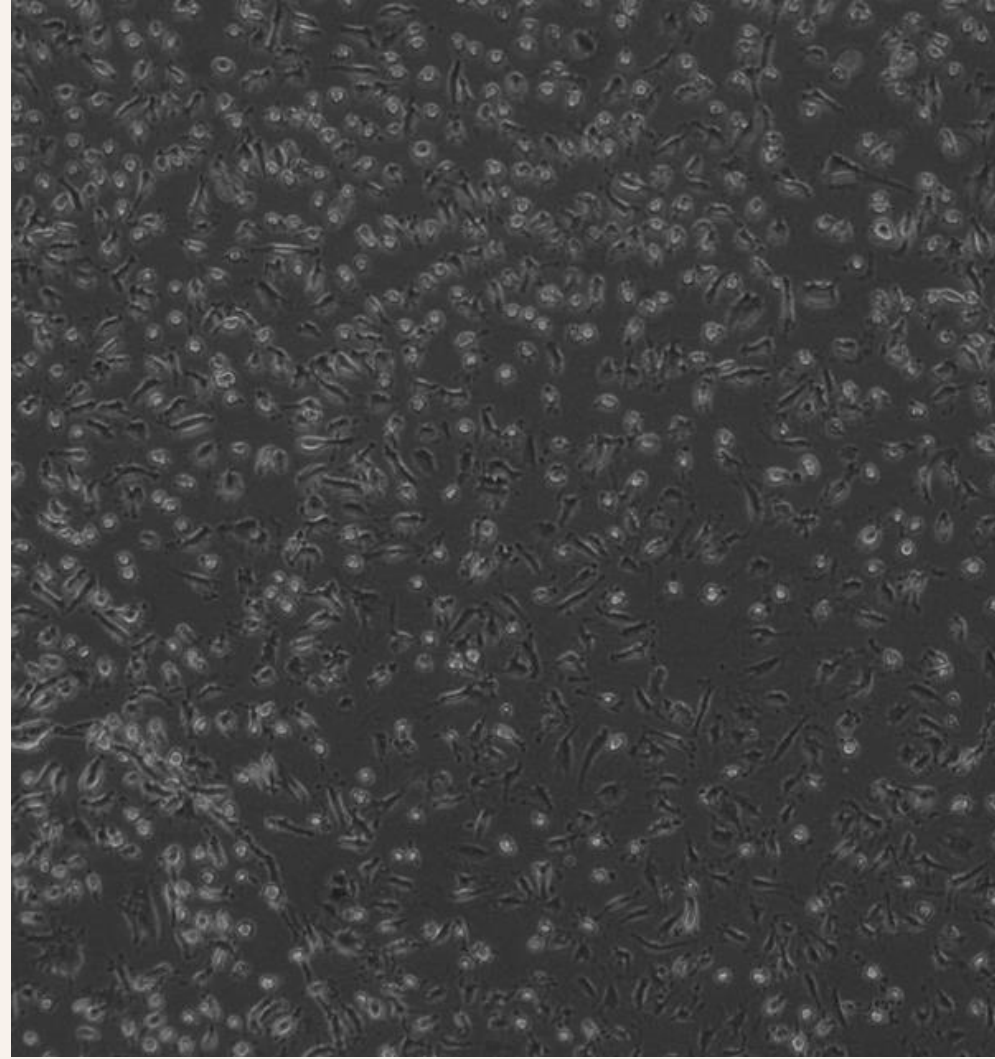


# New Cells

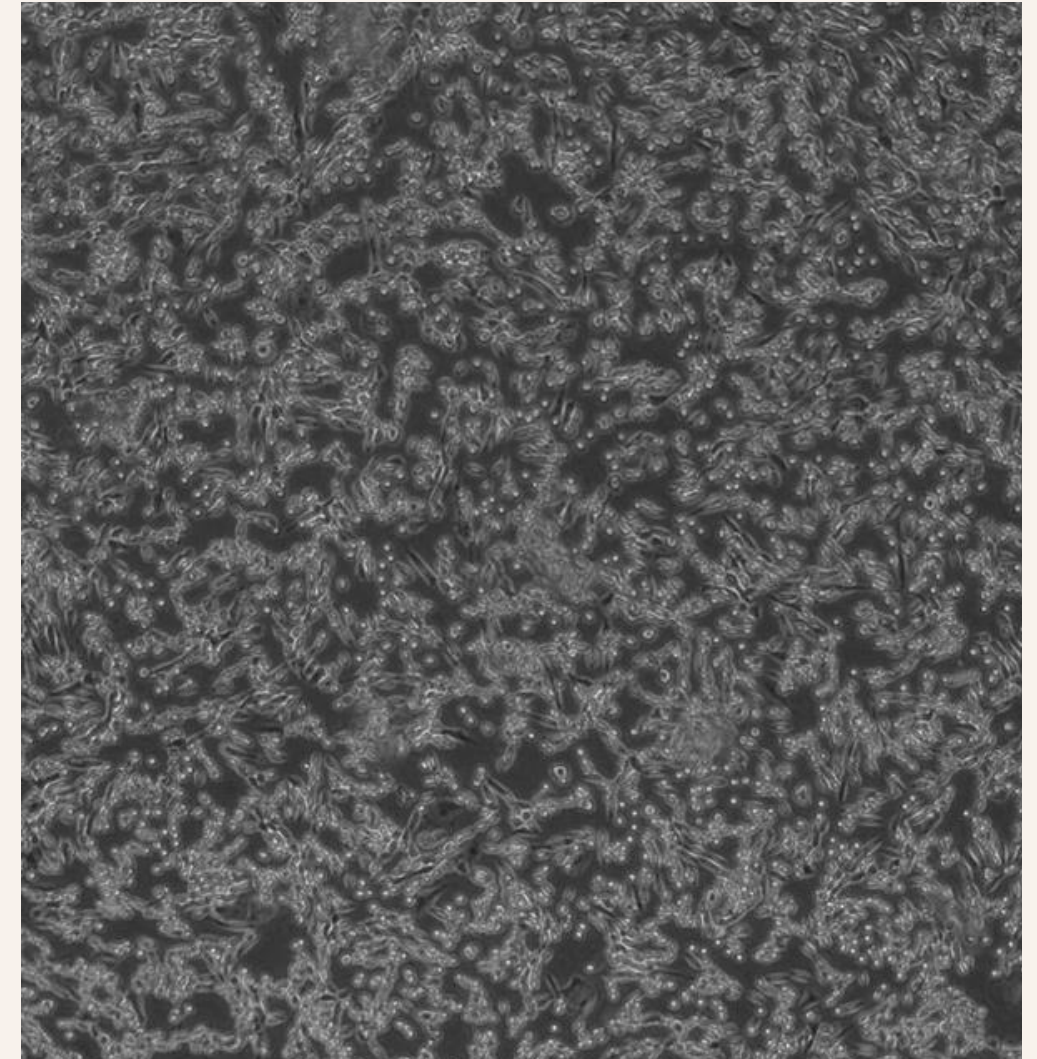
ARPE



Retinal Endothelial



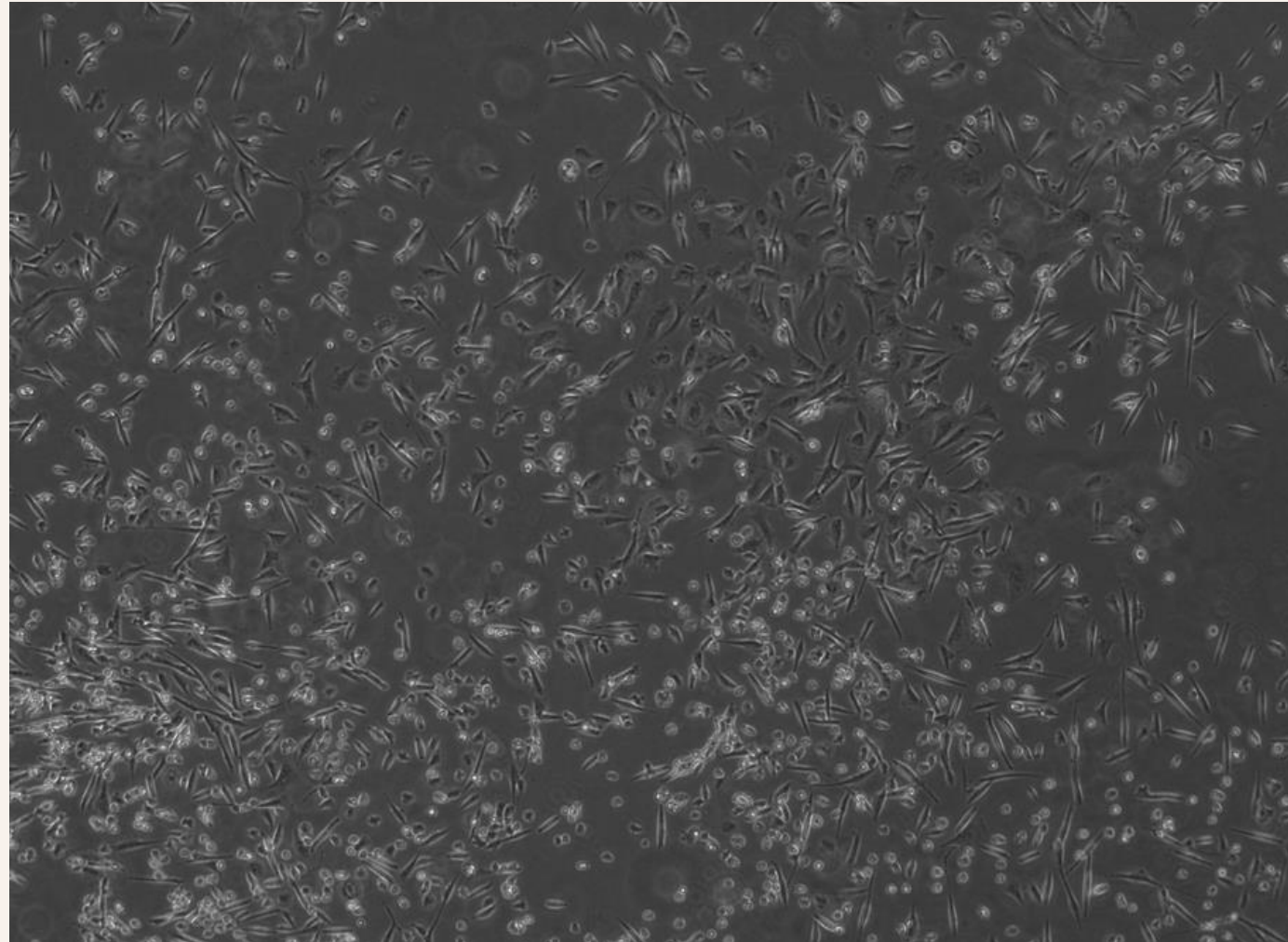
Choroidal Endothelial



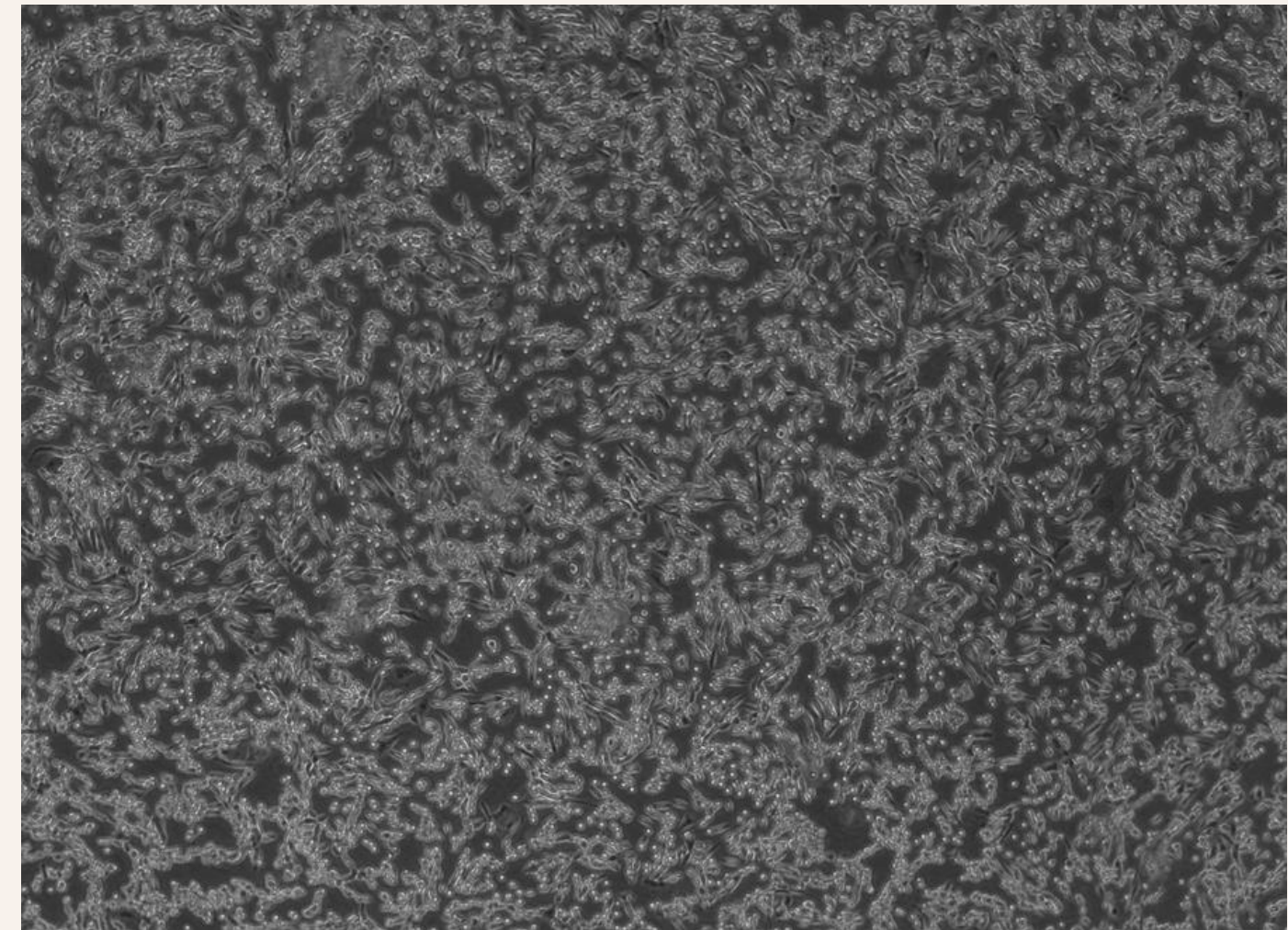


# Introduction to Comparative Studies

Choroidal Endothelial 7/17



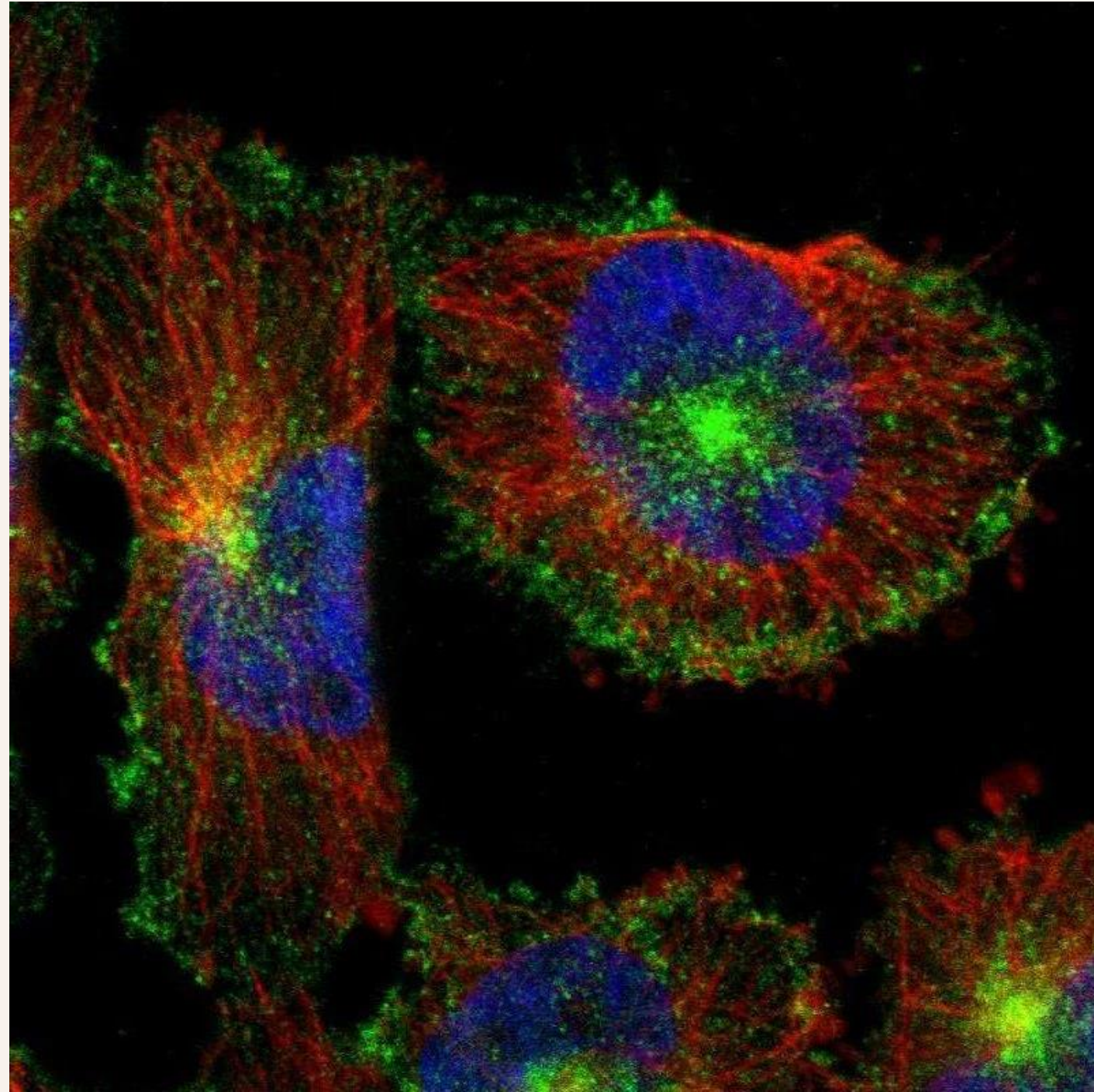
Choroidal Endothelial 7/19



- Performed 3 PBS washes
- Cells have almost reached confluency
- Growing as expected
- Could perform a 4th PBS wash next time



# Immunostaining

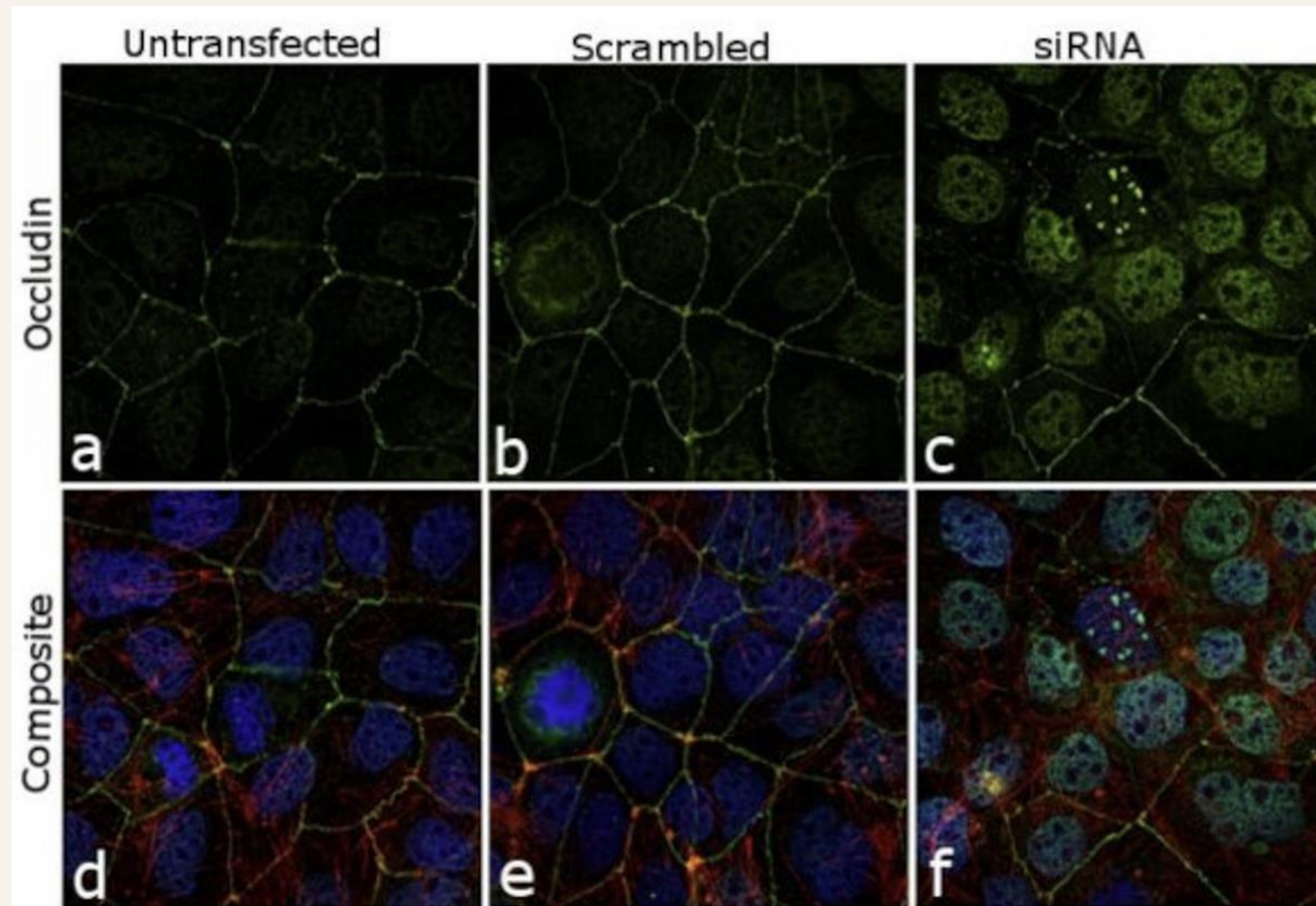


(Sigma-Aldrich)

- New protocol-immunostaining specific
- New training
- Cell morphology



# Tight Junction Protein



Occludin

Nucleus

(Thermo Fischer  
Scientific)



# Comparative Study for brain cells



Well 1: DMEM F12 10% FBS +  
EGF



Well 2: DMEM F12 10% FBS (no  
EGF)



Well 3: HUVEC



Well 4: HUVEC



Well 5: DMEM F12 10% FBS (no  
EGF)

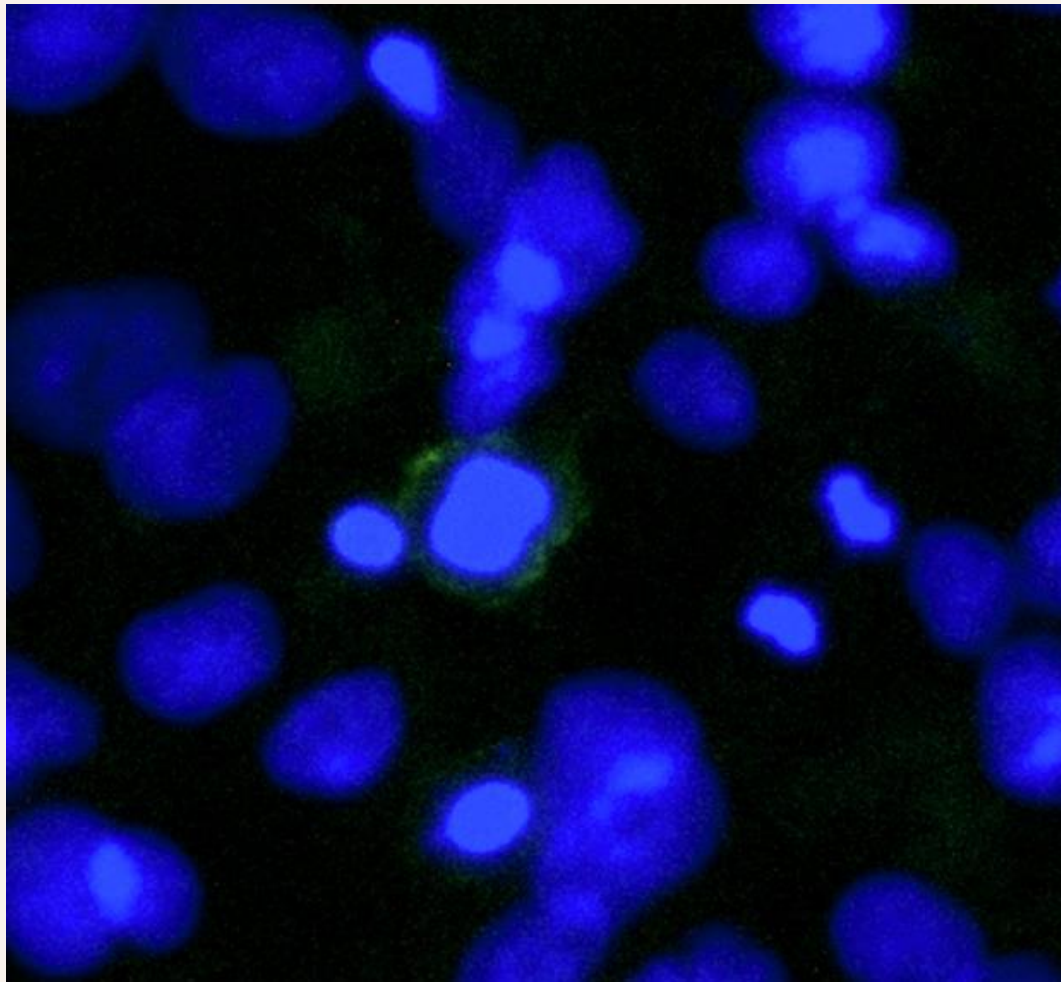


Well 6: DMEM F12 10% FBS +  
EGF (AF Soak)

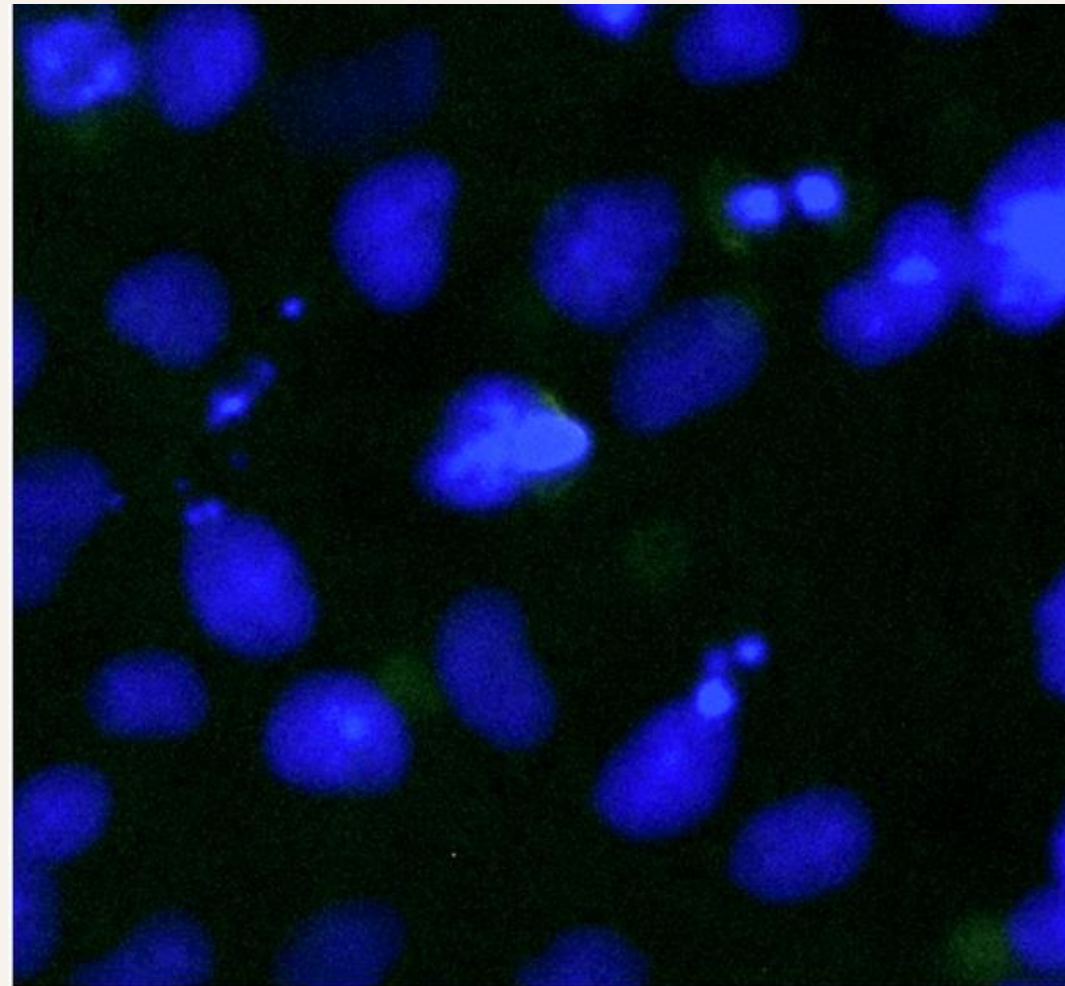


# TJP Captured

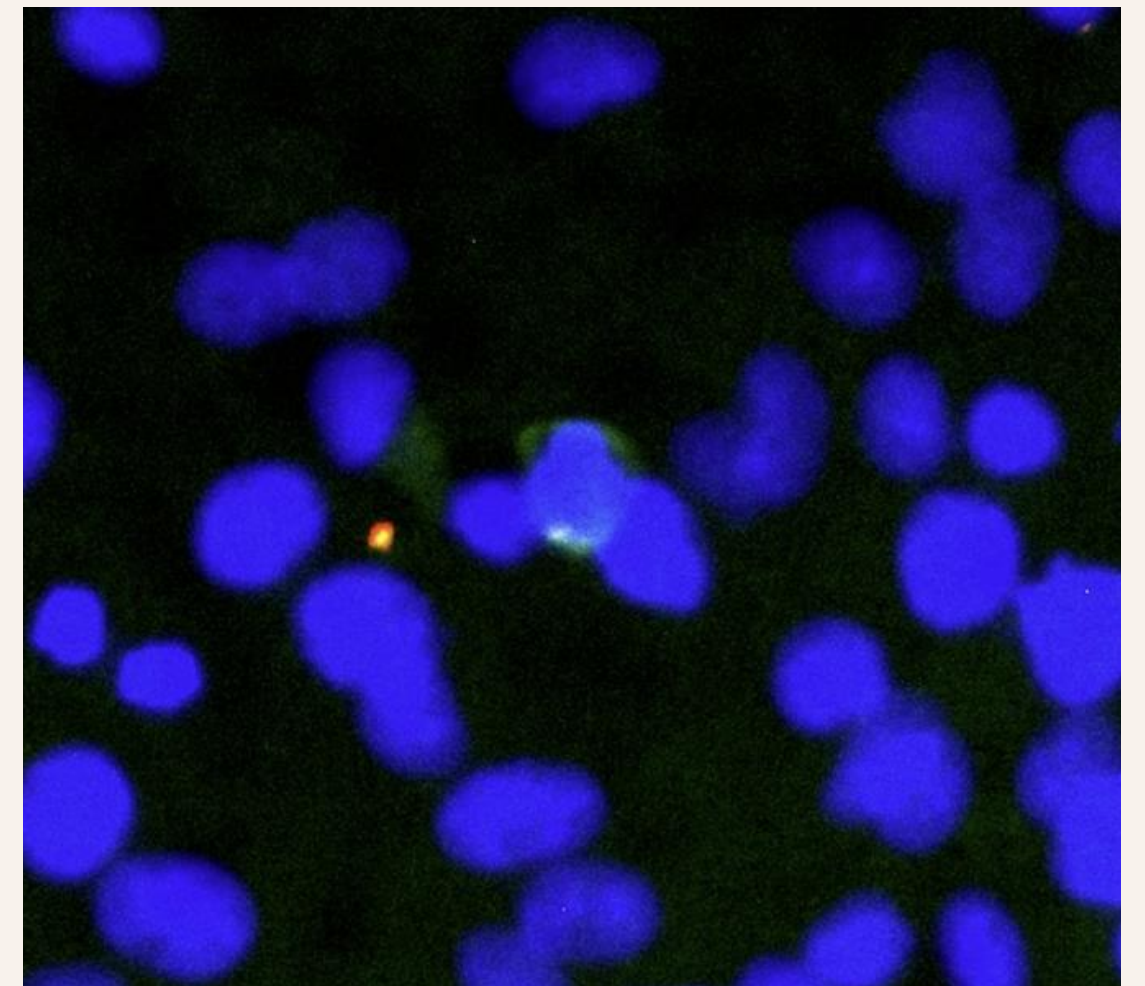
Nucleus  
Occludin  
Claudin-5



Well 6: AF Group



Well 6: AF Group

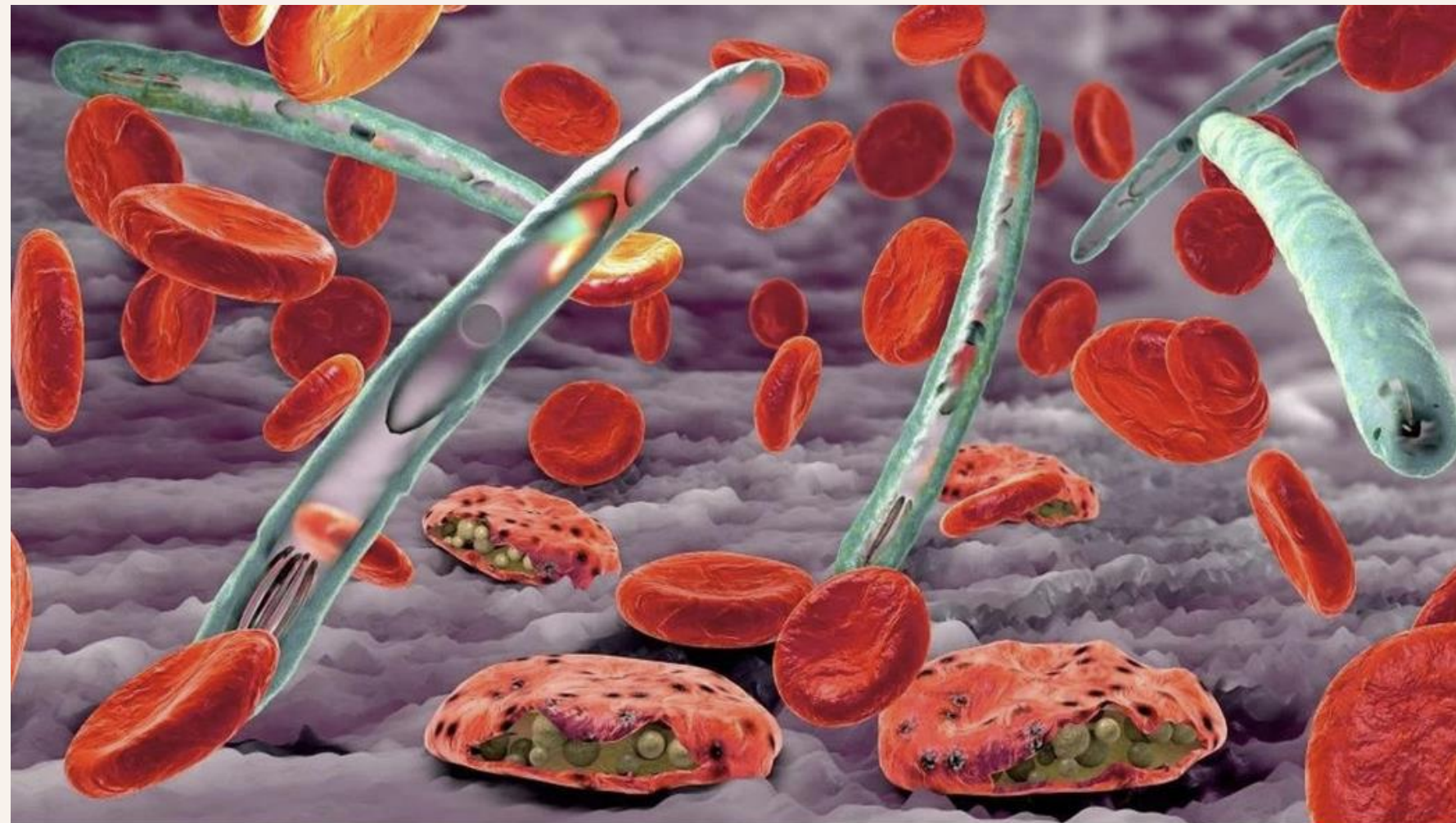


Well 6: AF Group



# Recommendations and Application

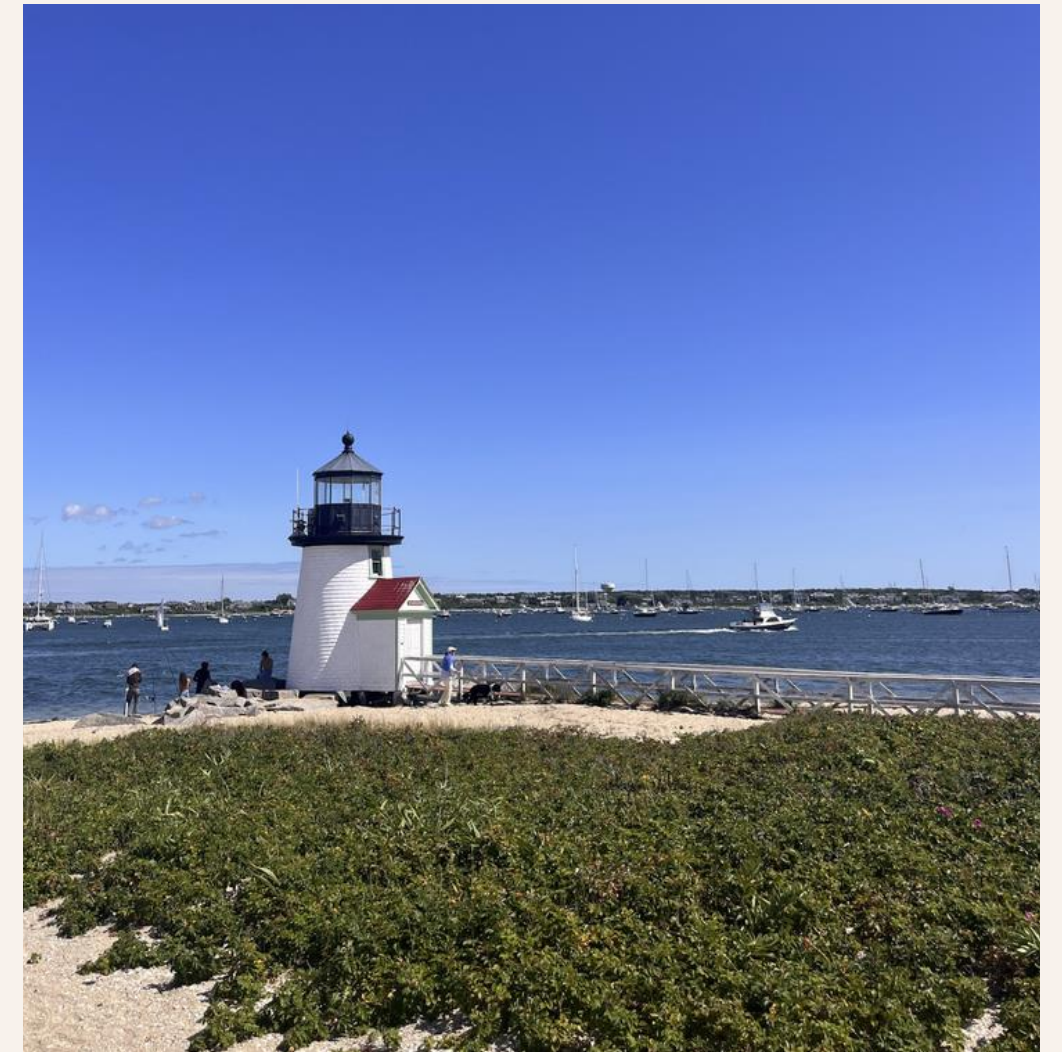
- Optimized Protocol = DMEM F12 10% FBS + EGF, Gelatin soak
- Contamination
- Downstream Application



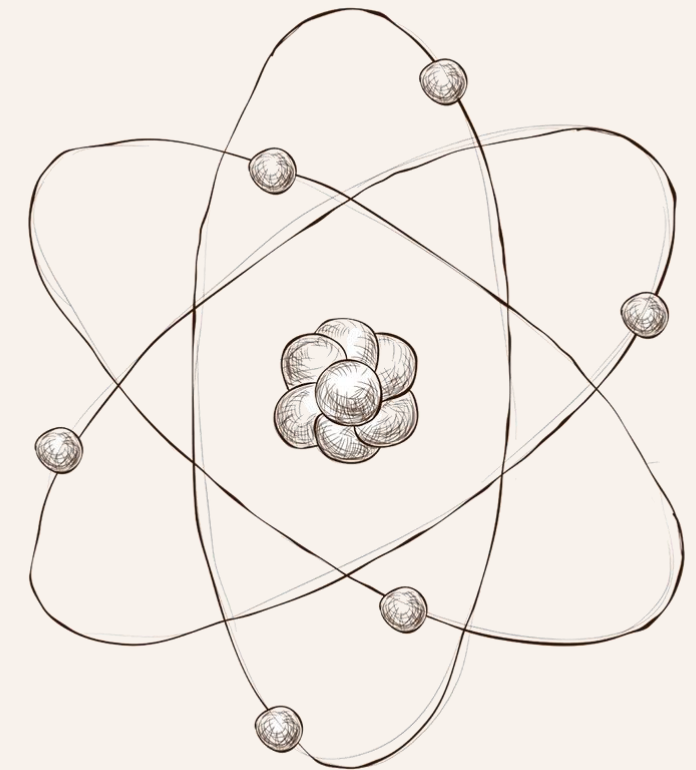
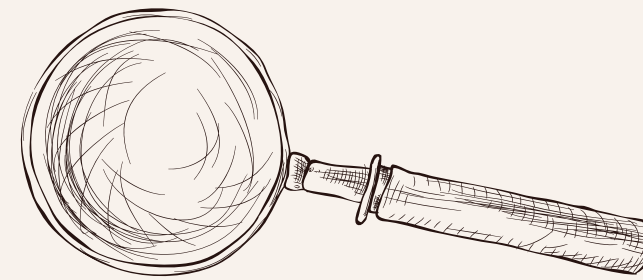
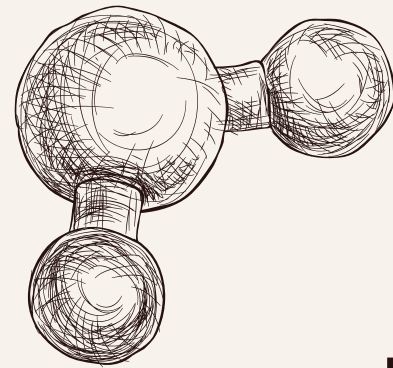
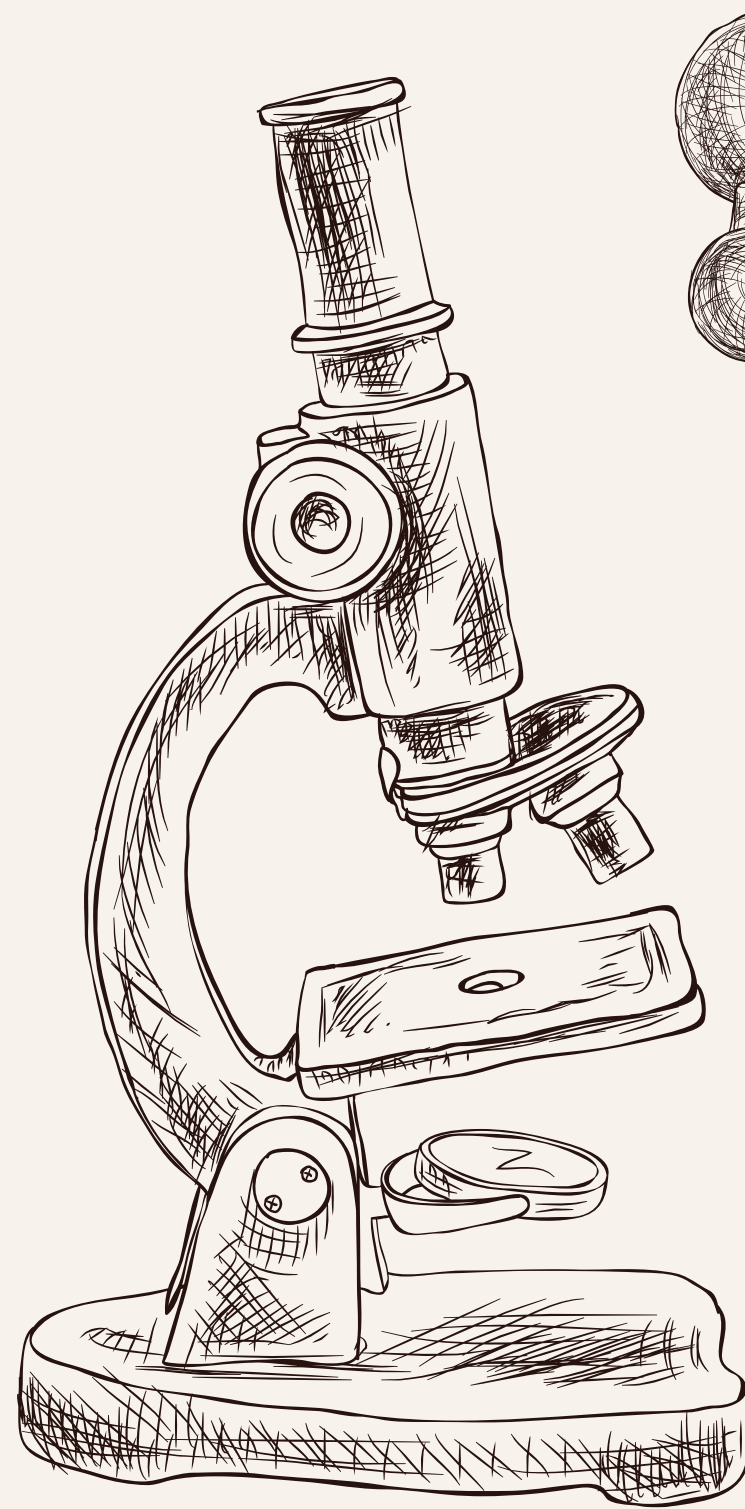
(Robertson, 2019)



# Conclusion

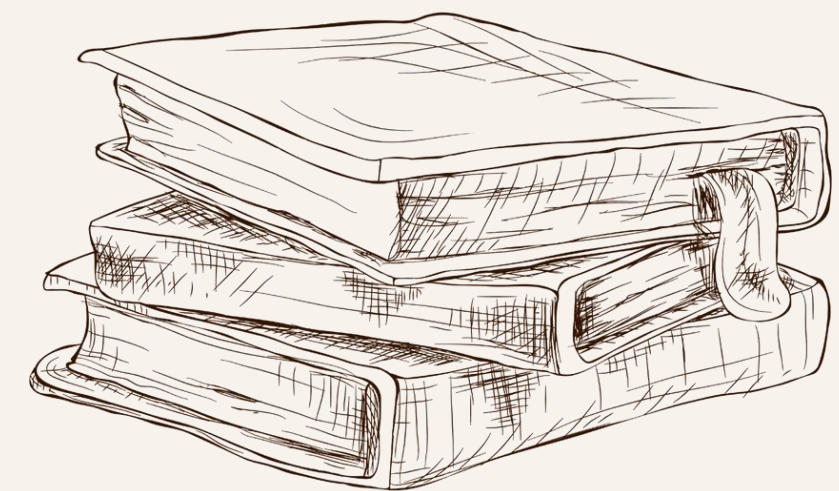






# Thank you!

**Do you have any questions?**



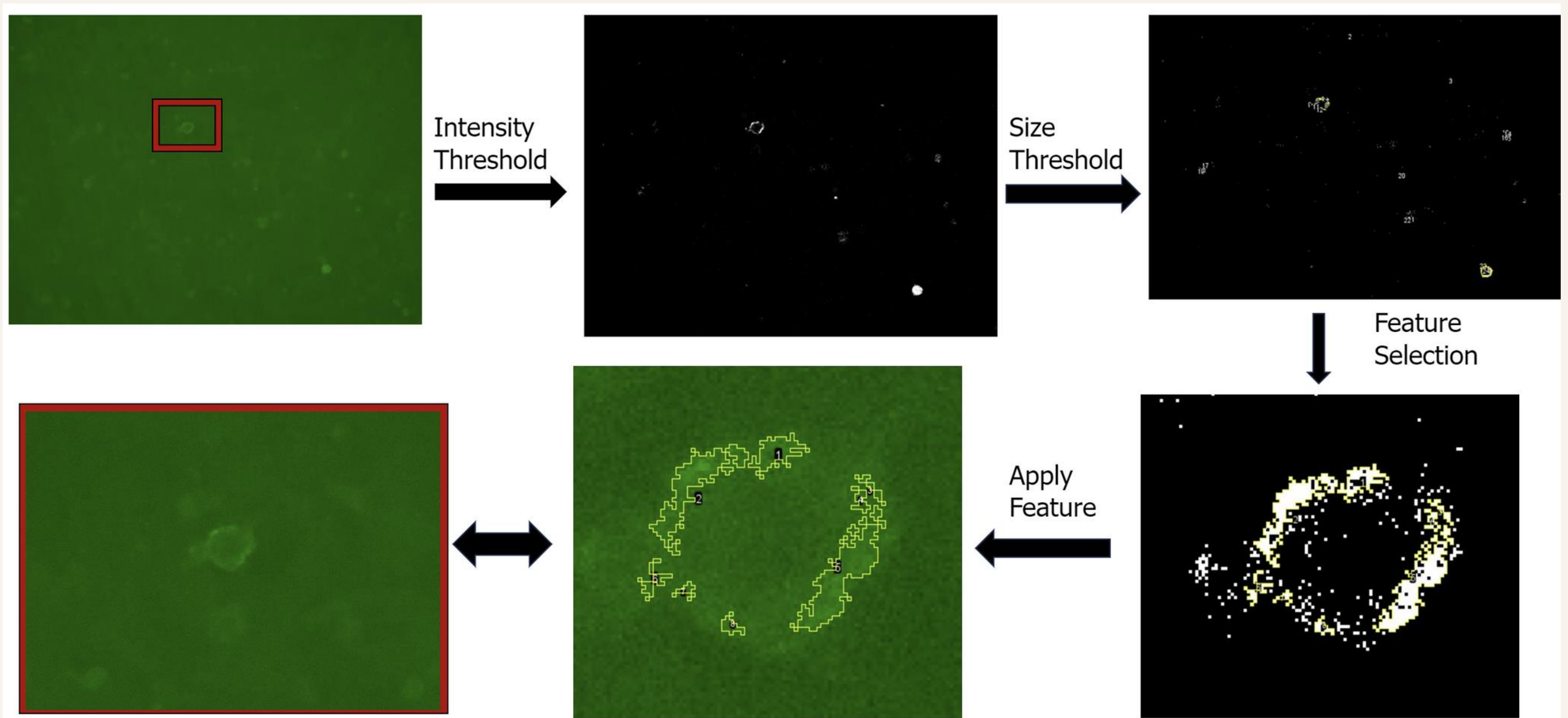


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# Supporting Information





# Supporting Information

