

# Structural Analysis of HSP22

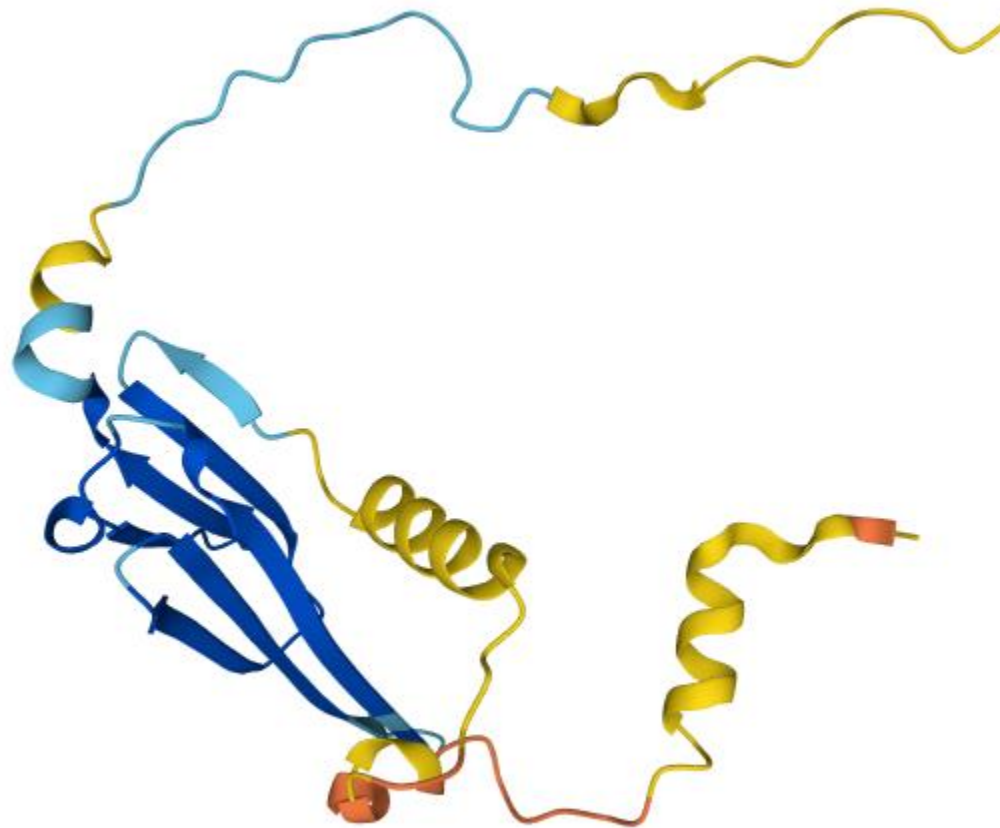
**Weiqi Gu**

Structural Biology Division

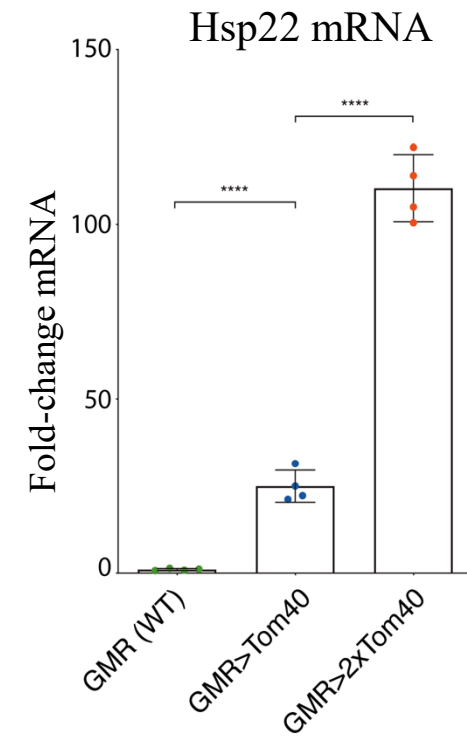
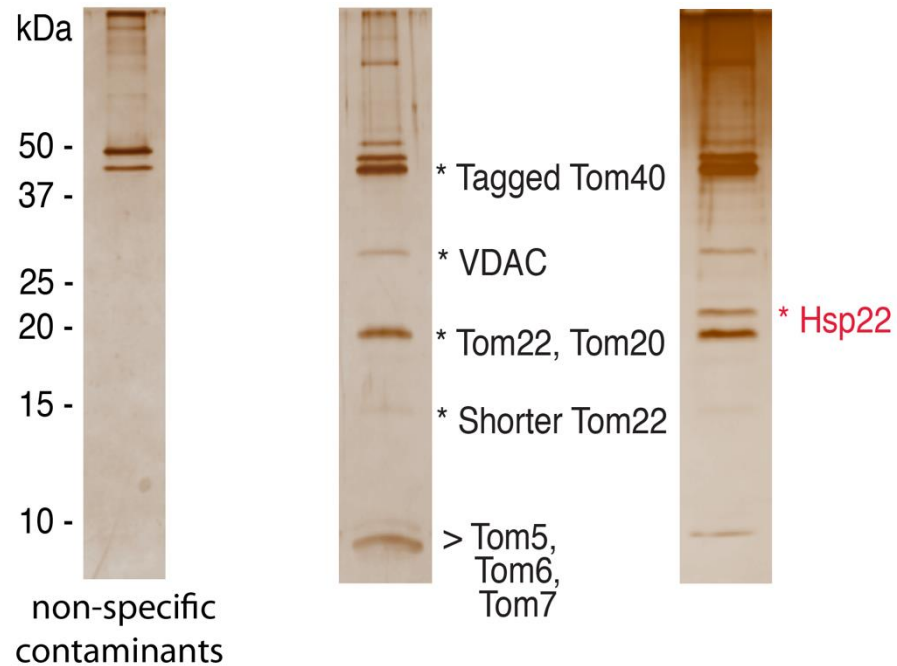
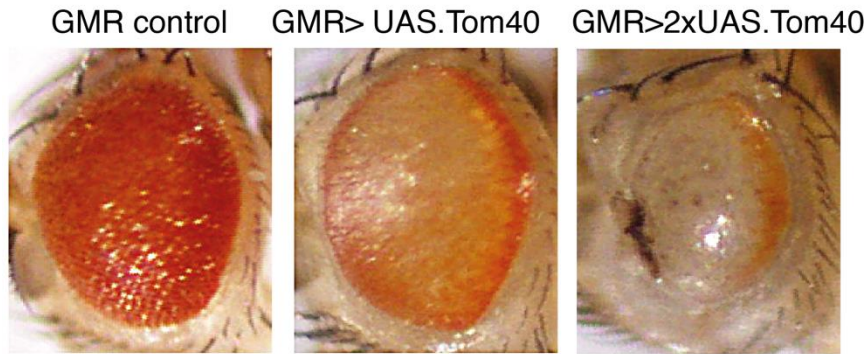
Walter and Eliza Hall Institute of Medical Research

# Hsp22

## small heat shock protein family



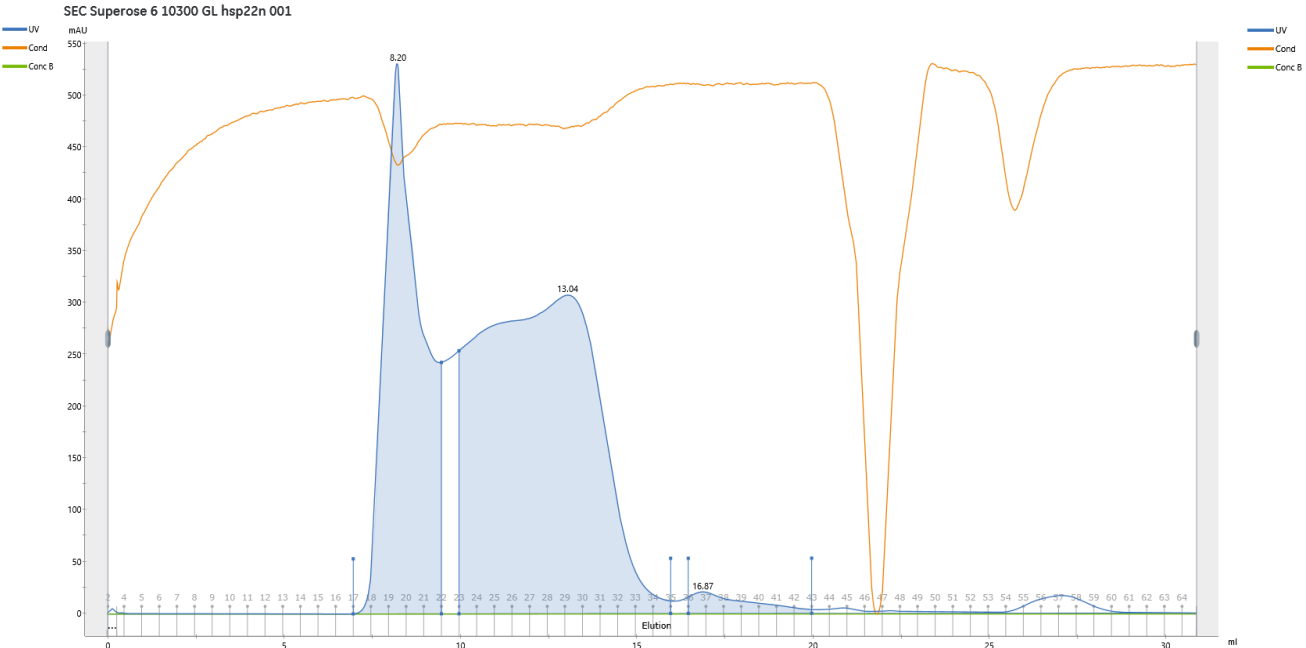
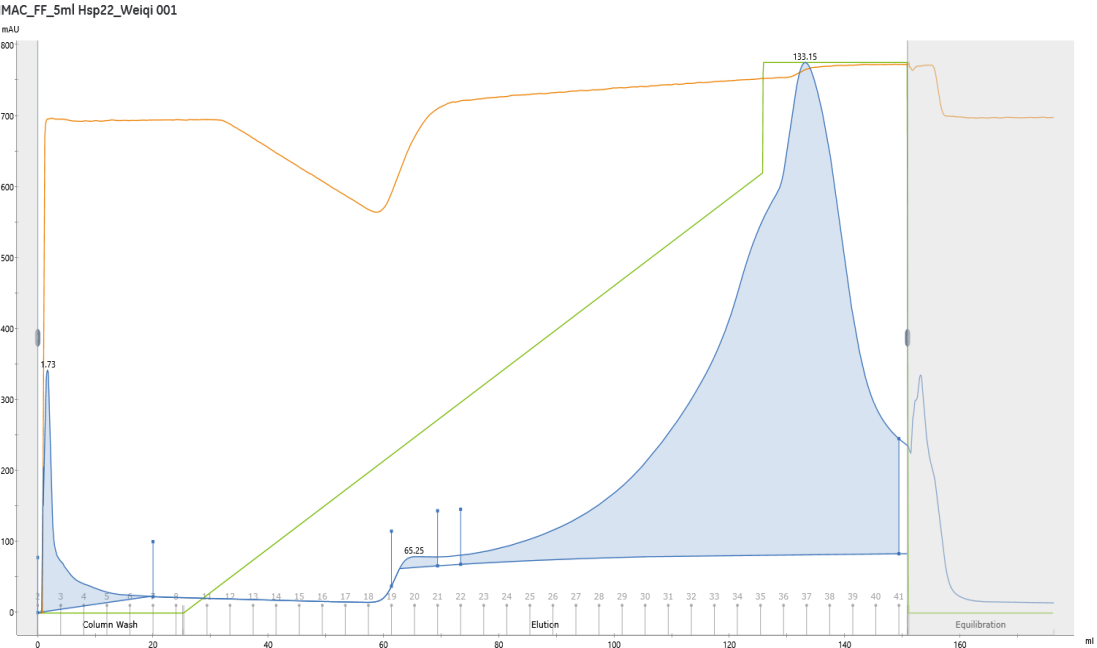
## Hsp22 upregulates and associates with Tom40 under cell death conditions





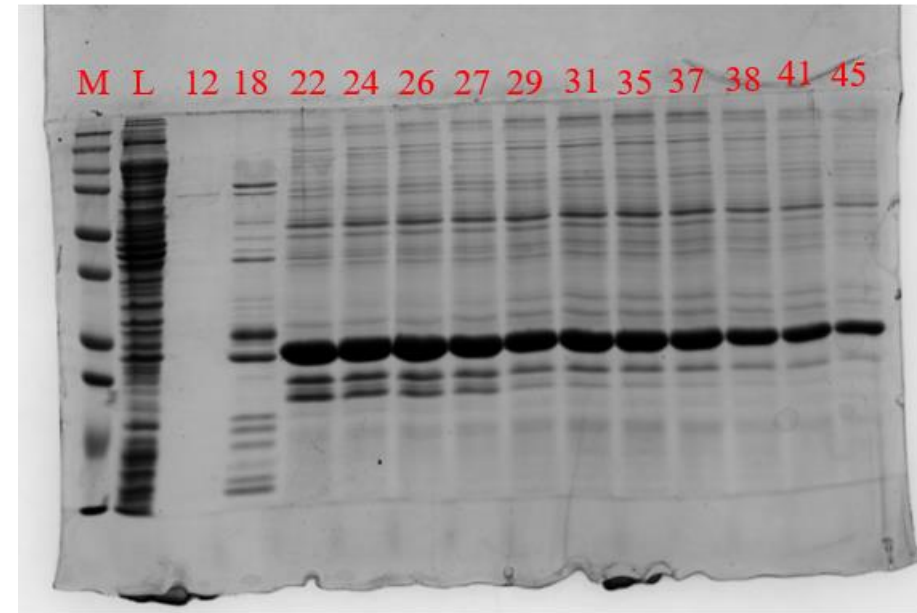
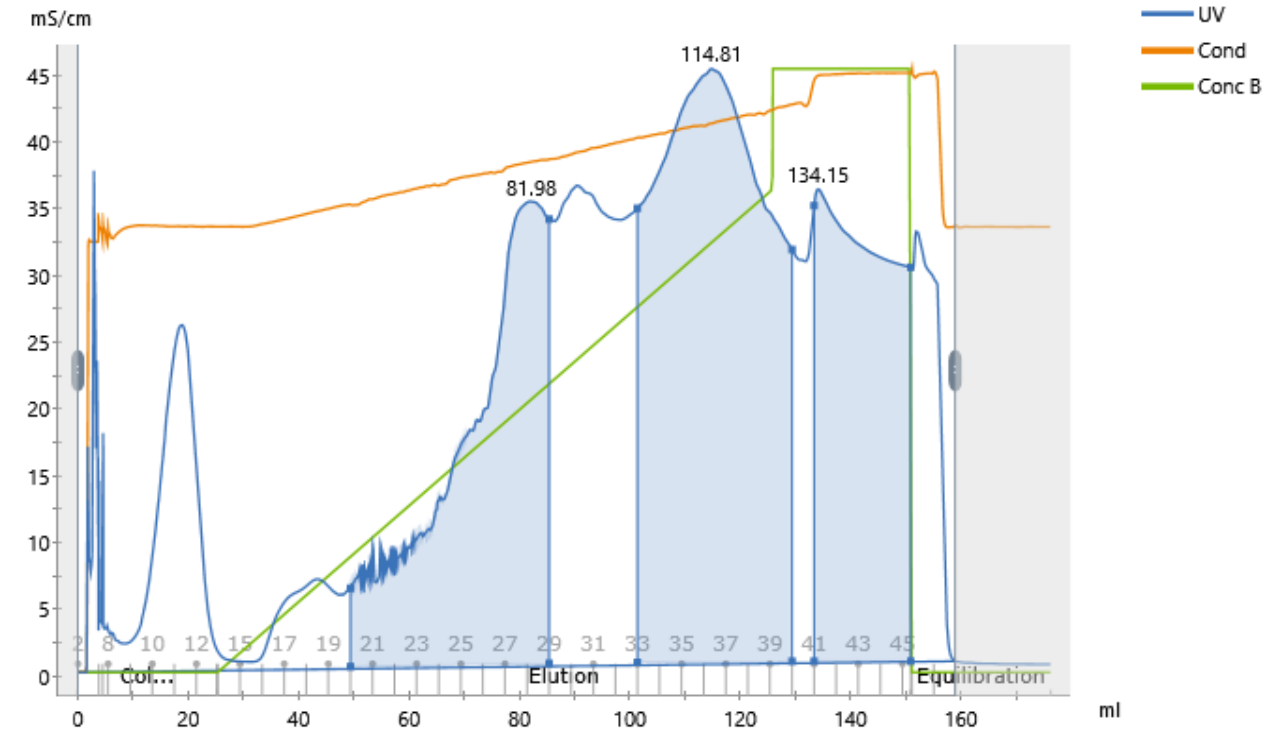
# Protein Preparation

# First Prep



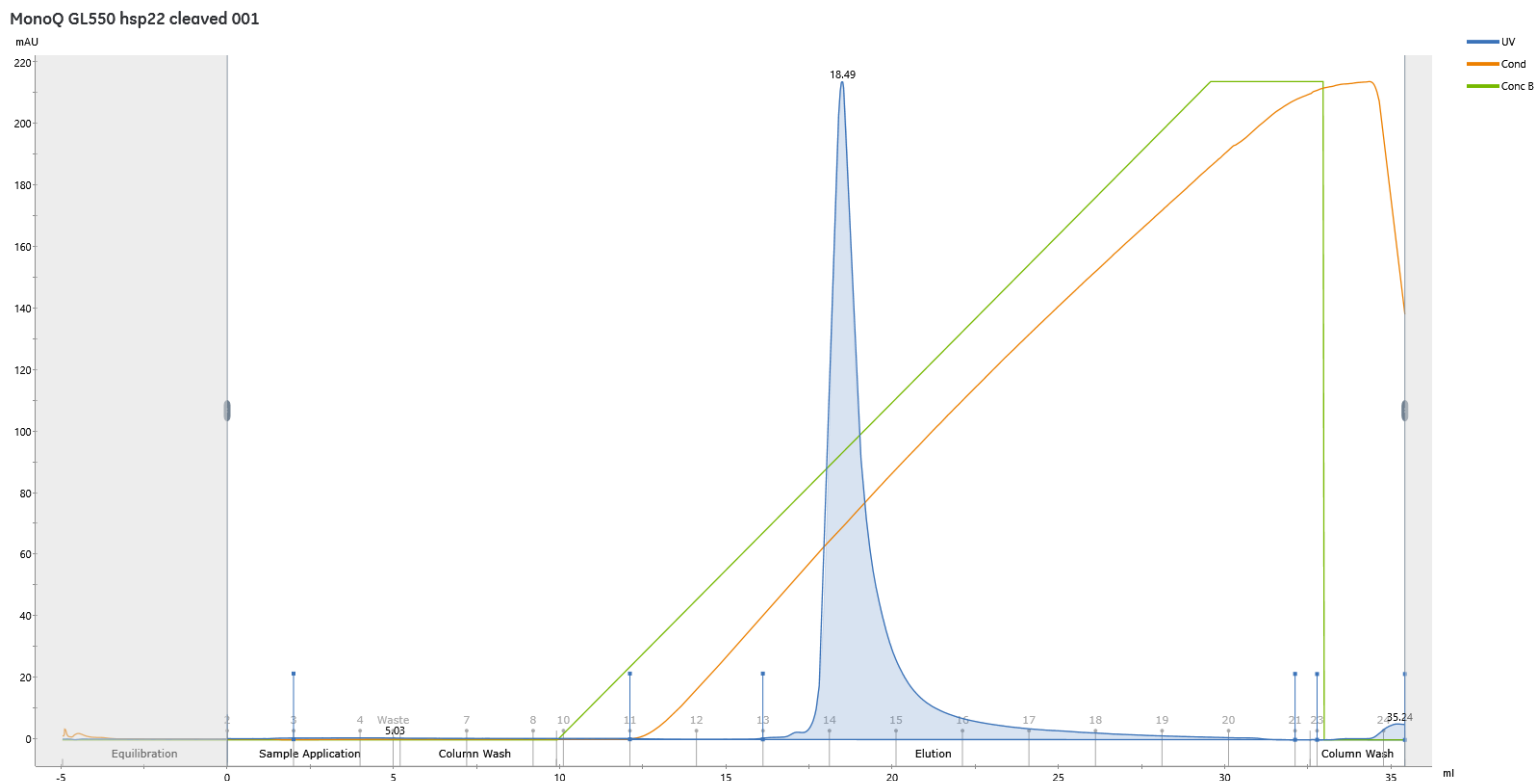
# Optimizing Conditions

IMAC 5ML Weiqi Hsp22 001

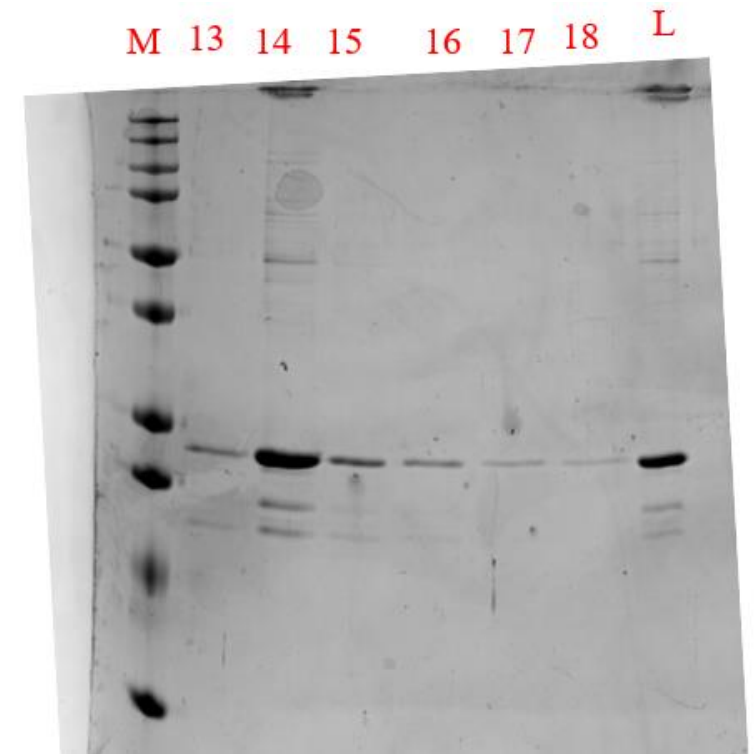


from phosphate buffer to tris buffer

# Optimizing Conditions



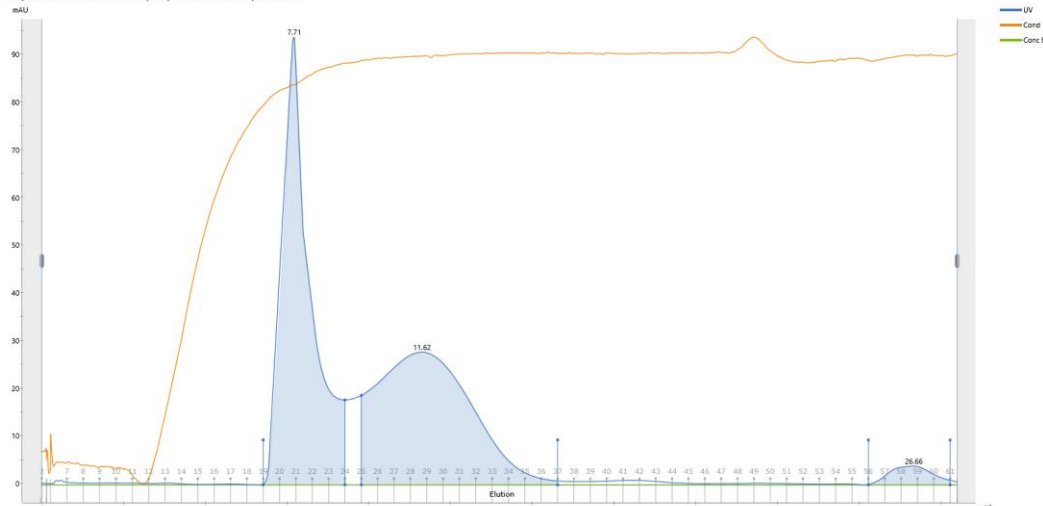
ion exchange



## Optimizing Conditions

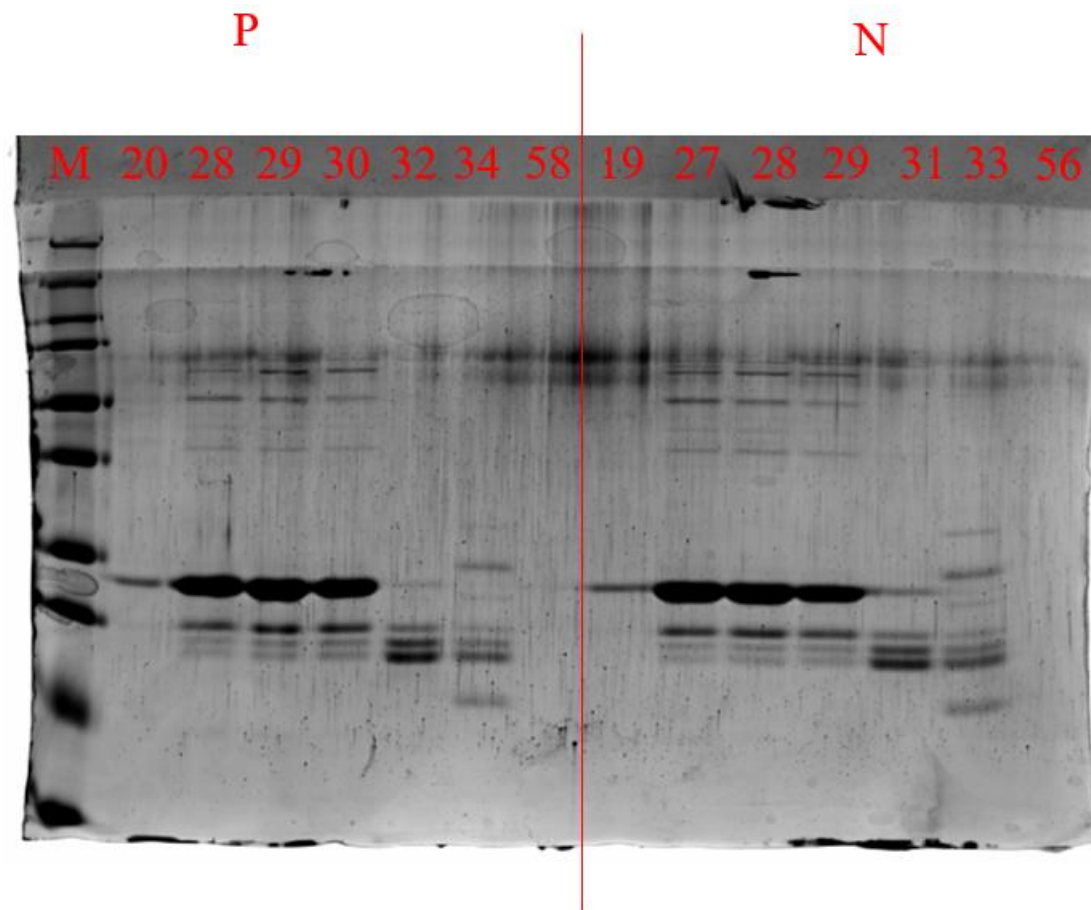
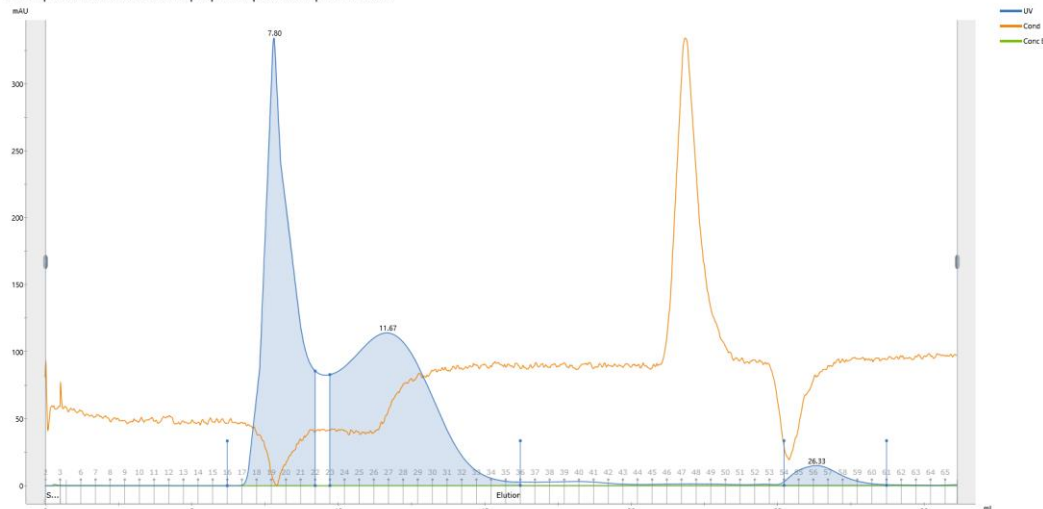
### Gel filtration with detergent(chaps)

Superose 6 10-300 GL Weiqi hsp22 25-8-22 3rd peak 001



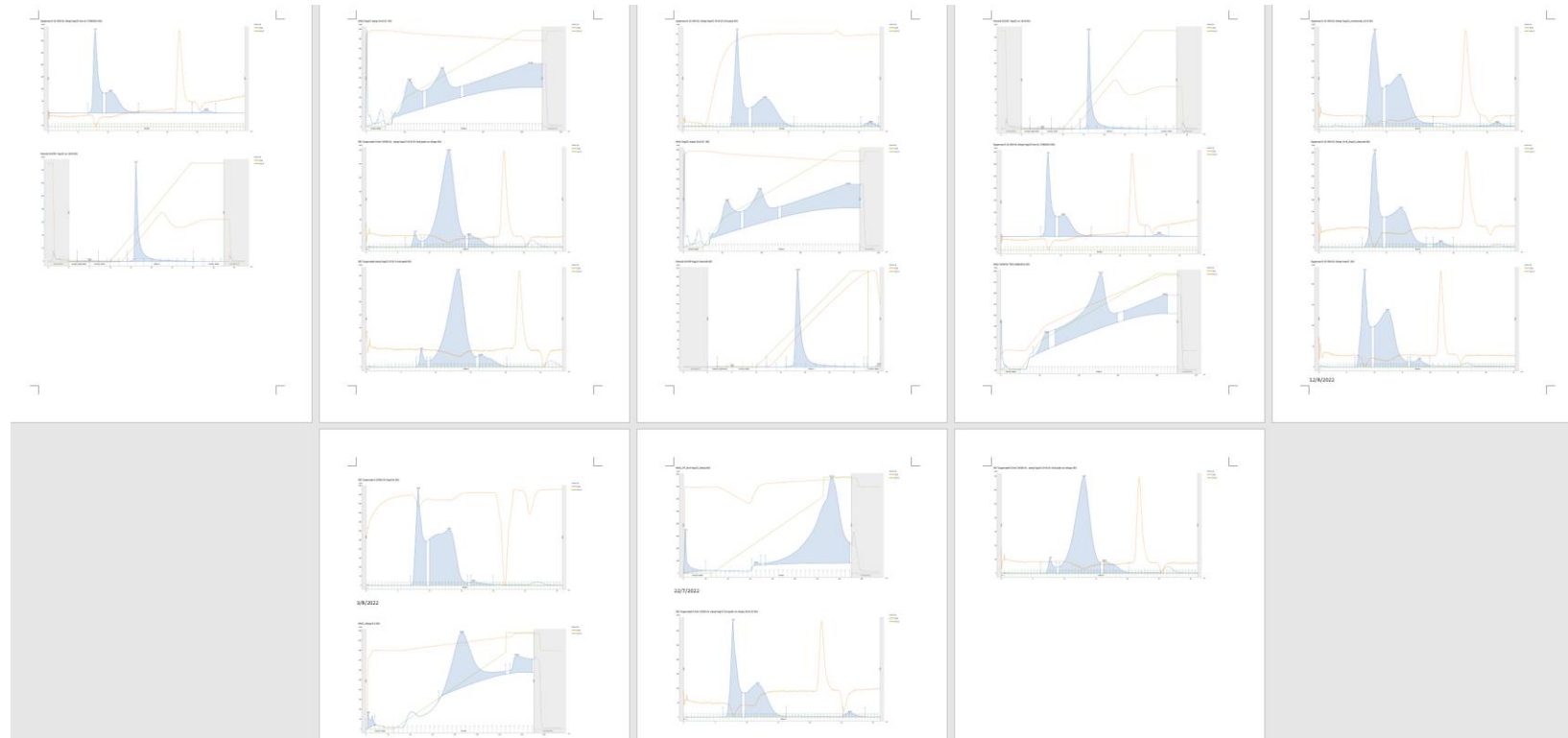
### Gel filtration without detergent

SEC Superose6 0.5ml 10300 GL weiqi hsp22 3rd peak 26-8-22 001





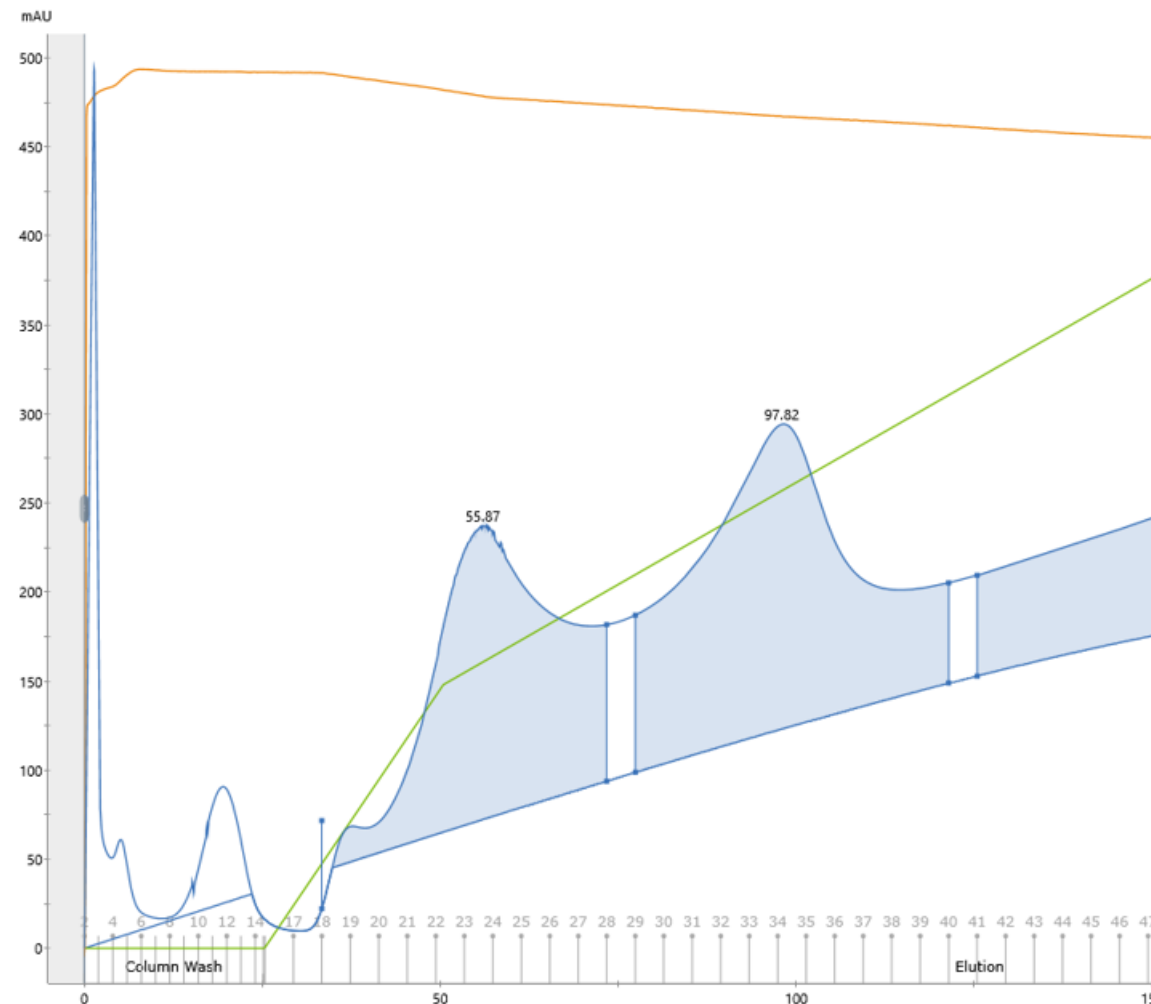
## Optimizing Conditions



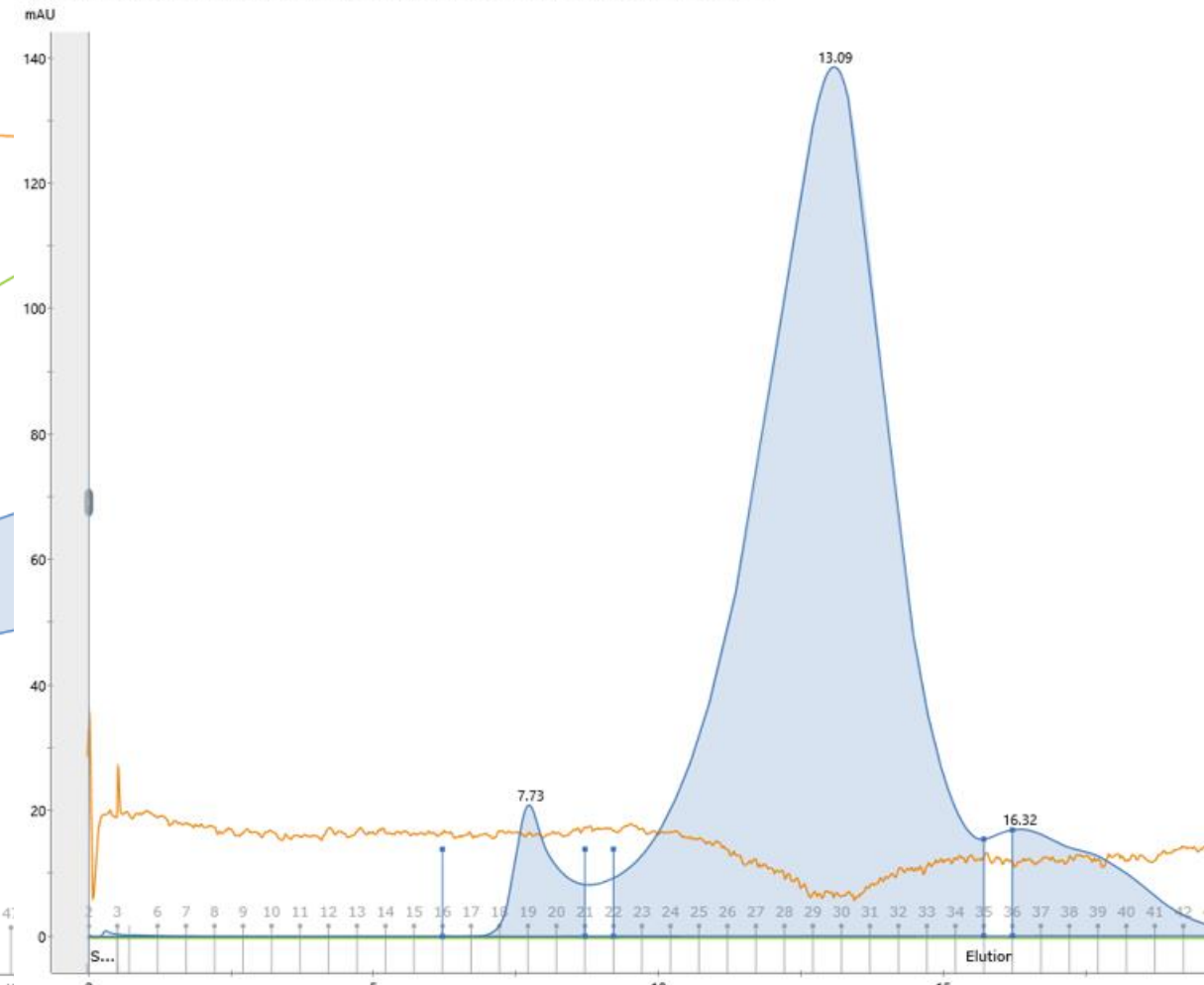


# Final Prep With a Magical Hand

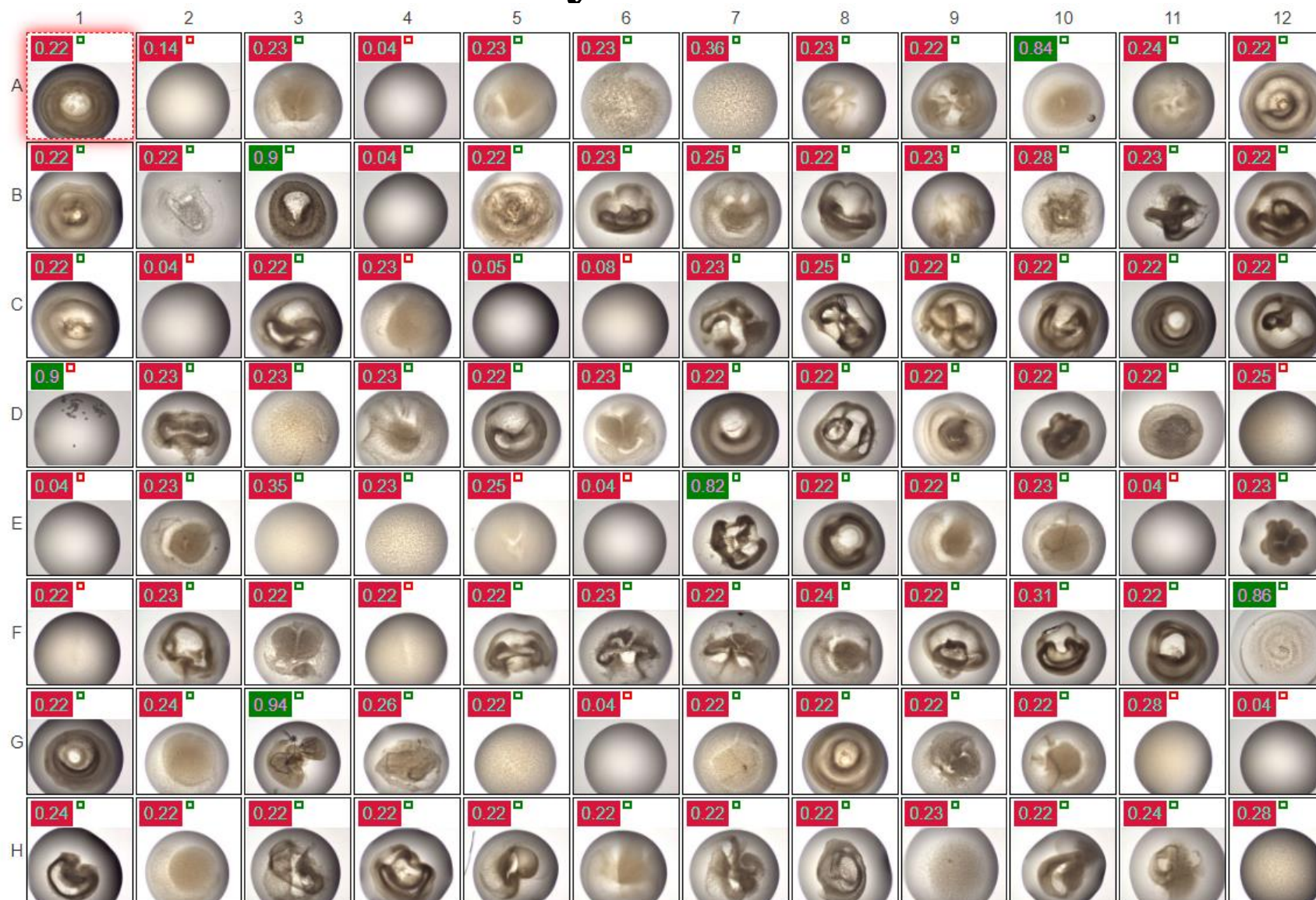
IMAC hsp22 weiqi 24-8-22 001



SEC Superose6 0.5ml 10300 GL weiqi hsp22 25-8-22 2nd peak no chaps 001

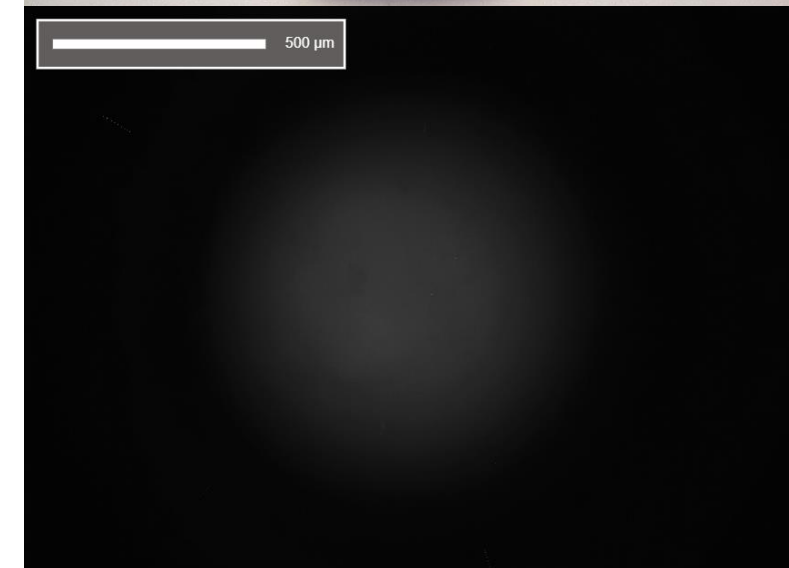
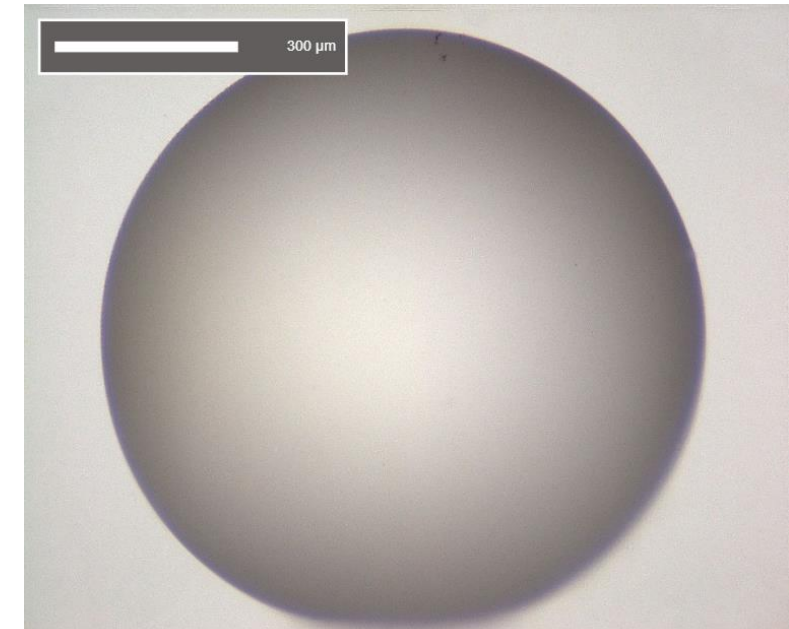
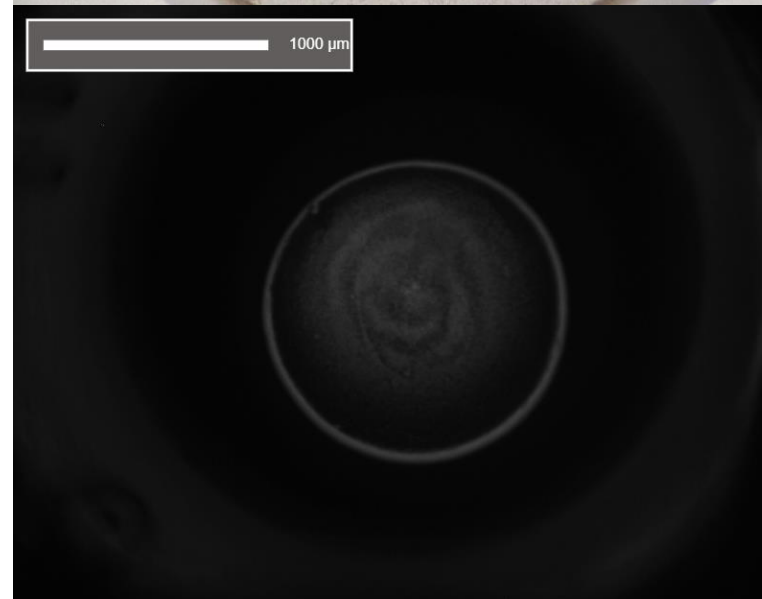
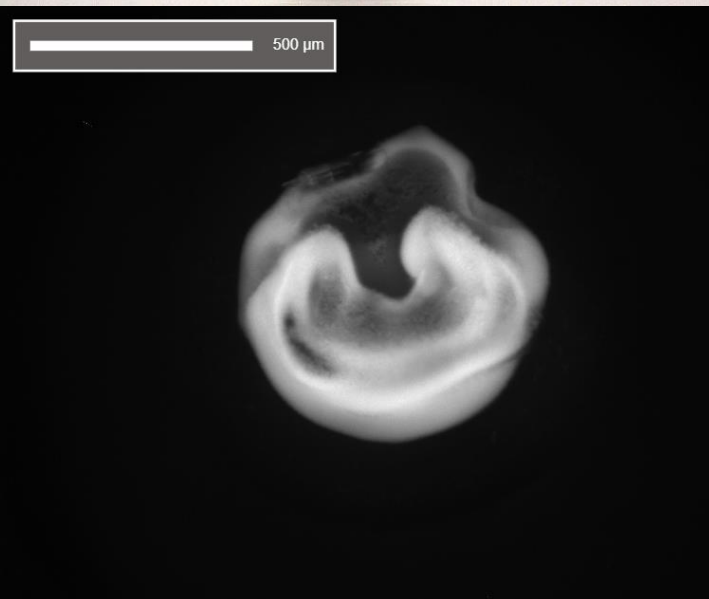


## Crystal Screen



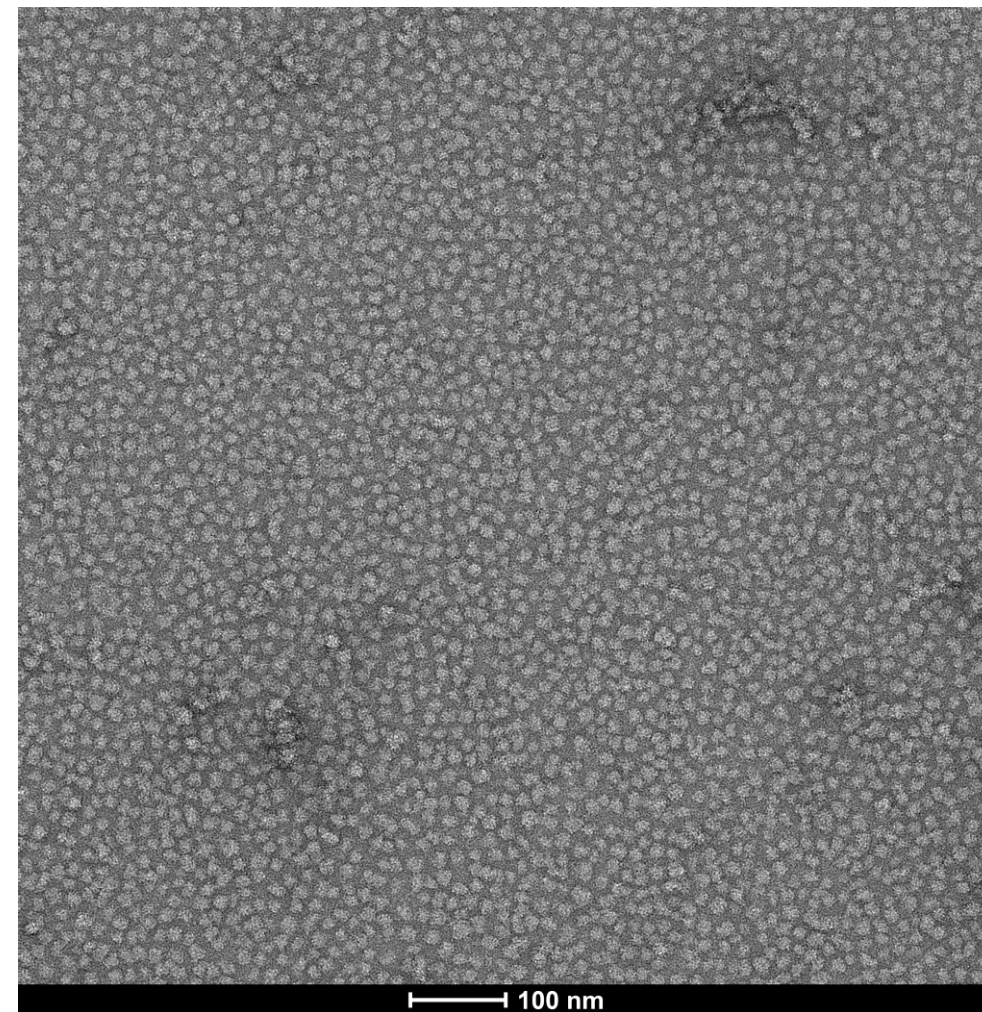
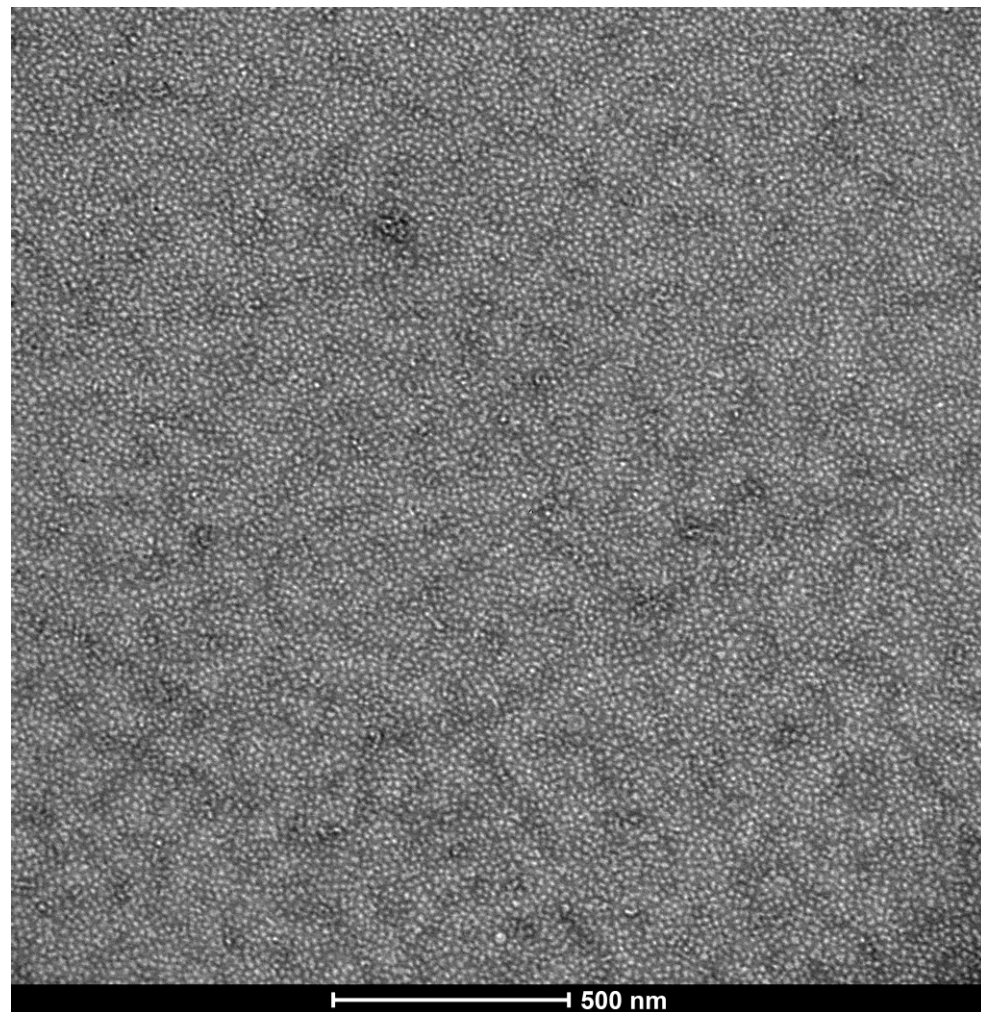


# Crystal Screen





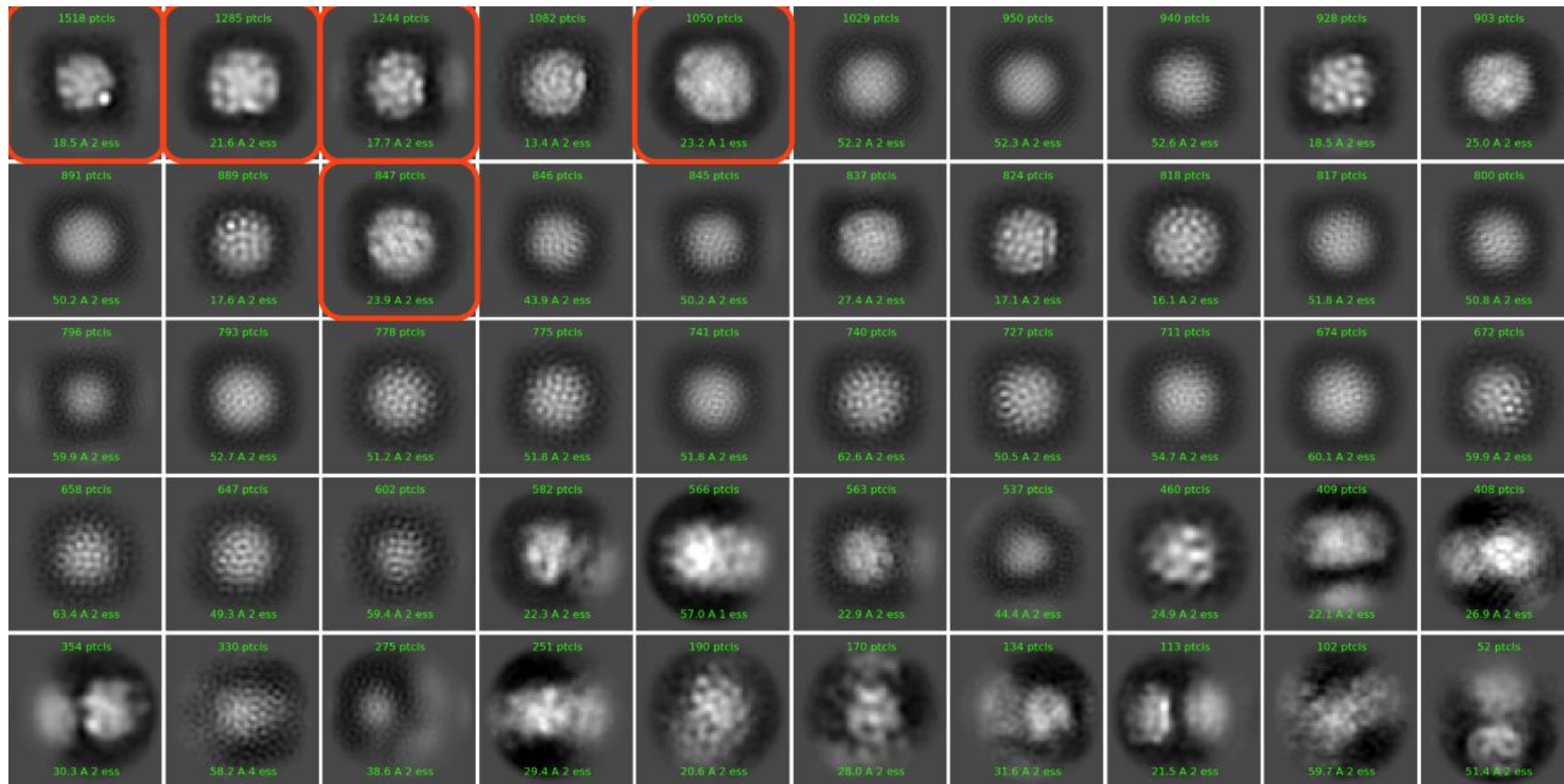
# TEM + Negative Stain



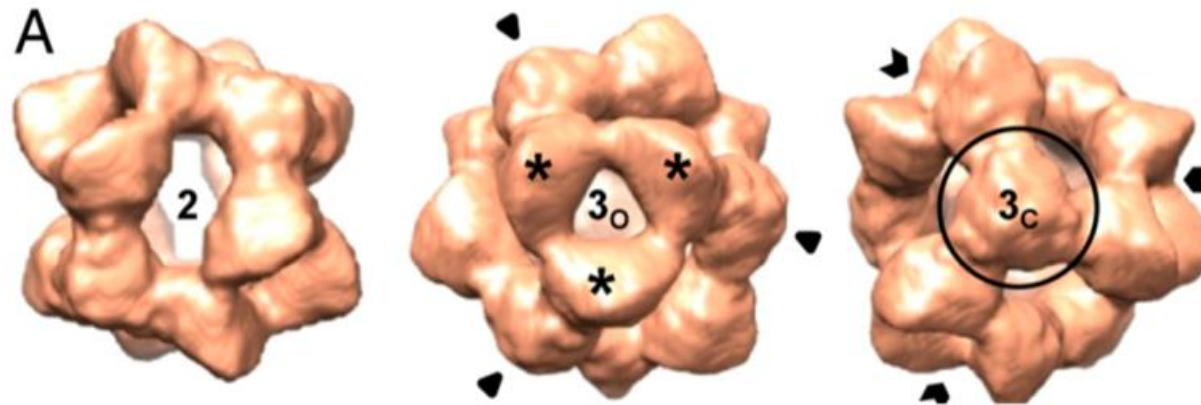
0.18 mg/ml



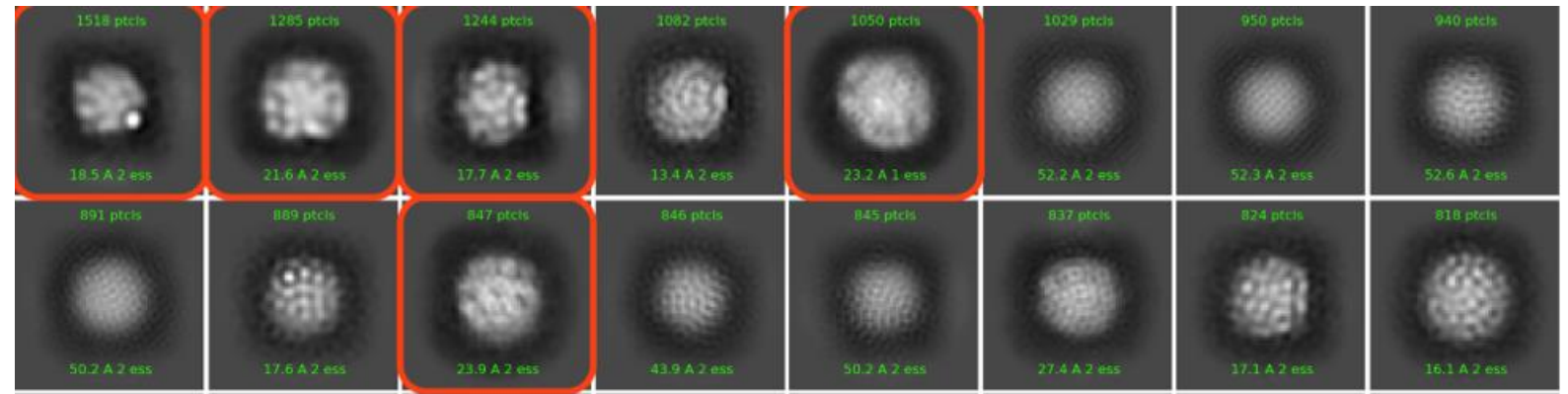
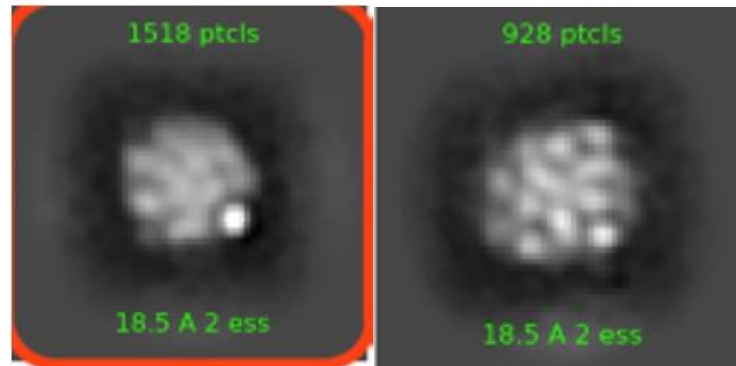
## 2D-Classification



# Compared with $\alpha$ B-crystallin



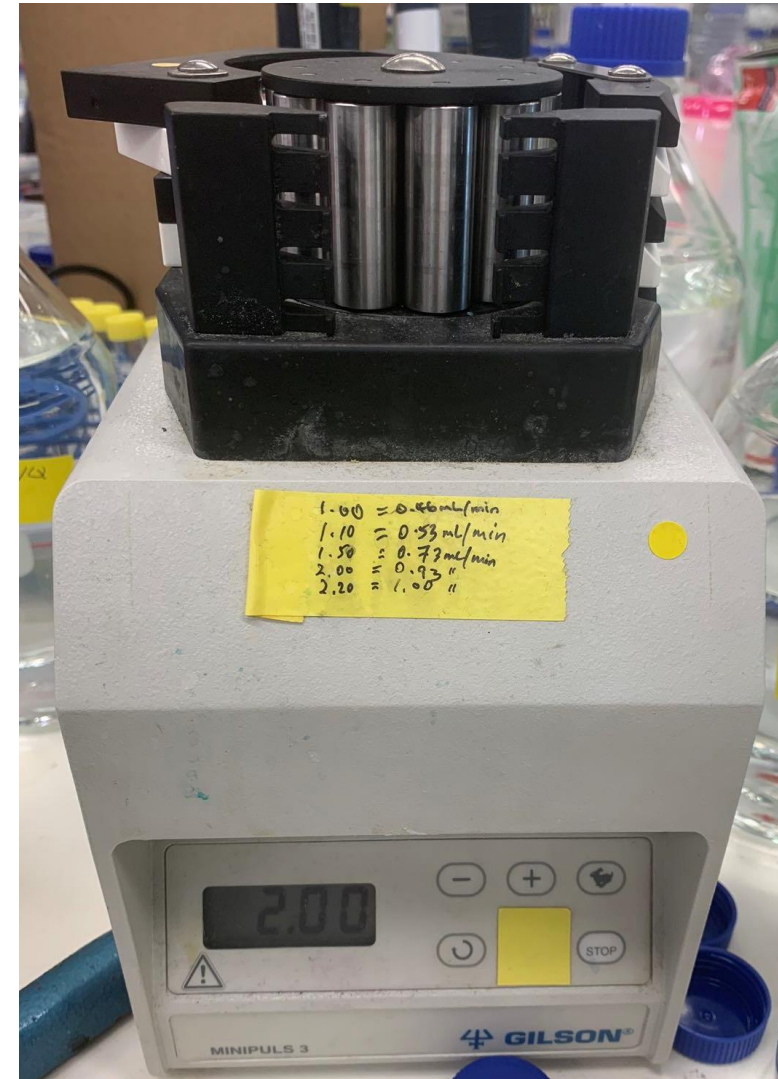
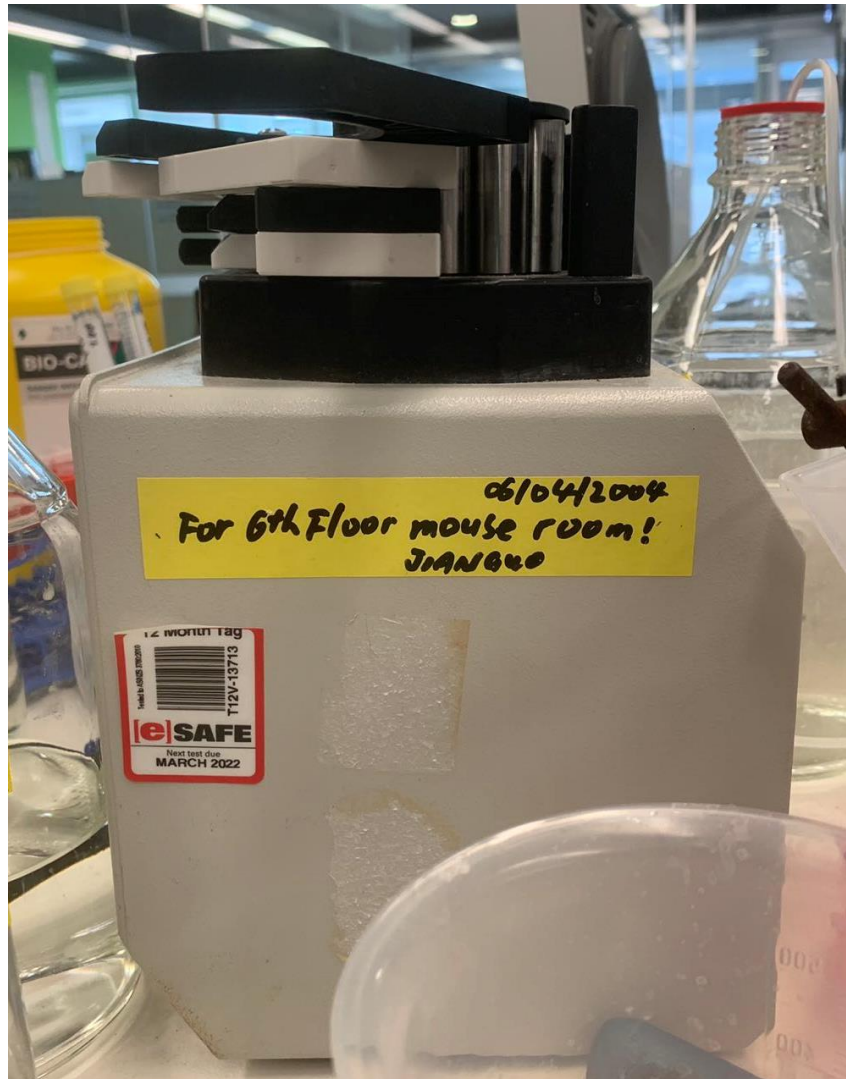
Braun N, et al.





# Legacy from Jianguo

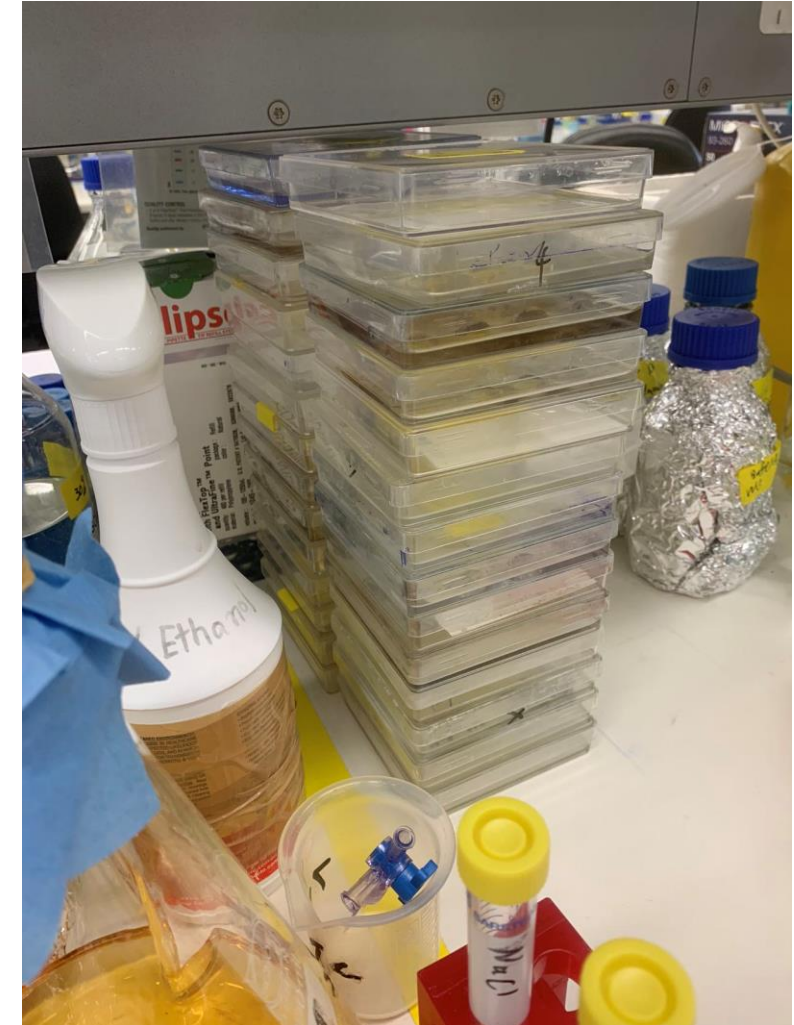
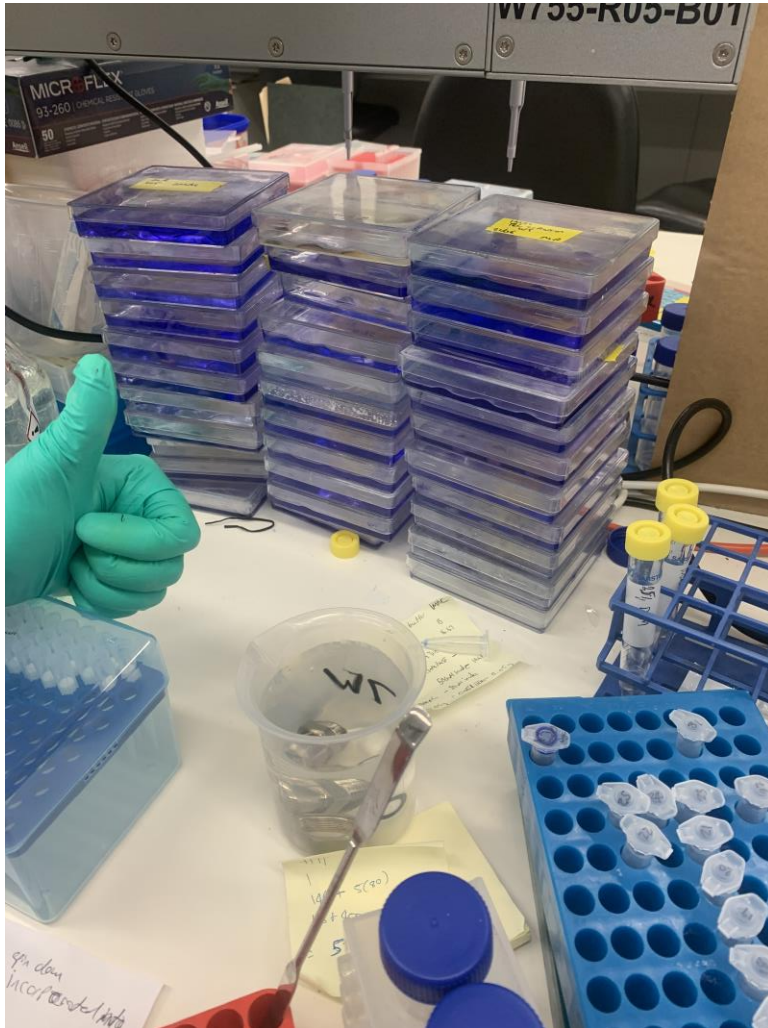
## Best Pump in the Division



Acknowledgement

# Hardworking Honours

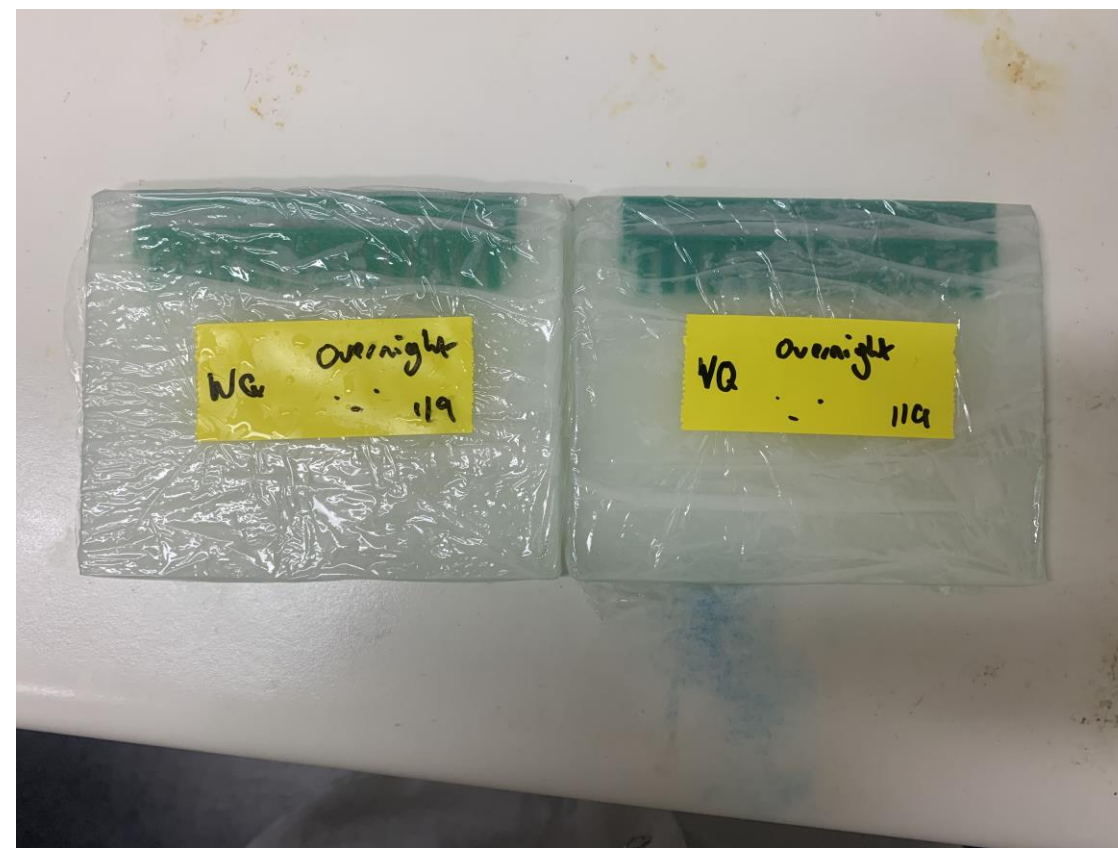
**“Sleep is for the weak”  
- Muhab**





# Long-lost Skill

## Handmaking Gels





# Acknowledgement To Everyone



Advisor:

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Supervisor:

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Czabotar Lab

Honour Year:

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Muhab Rehman

Structural Biology Division

Honour Year Students

Host Family

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Yujun Tang

Research Assistant

Maryam Sana

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Fellow InSPIRE Students

Negative Stain & 2D-Class

Andrew Leis

Nicholas Kirk

WEHI as A Big Family

Crystal Screen

Cindy Luo







Thank you

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