

## Structural Analysis of HSP22

Weiqi Gu

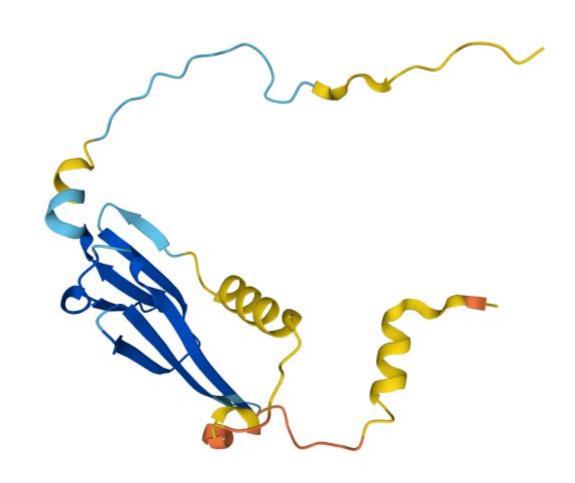
Structural Biology Division

Walter and Eliza Hall Institute of Medical Research





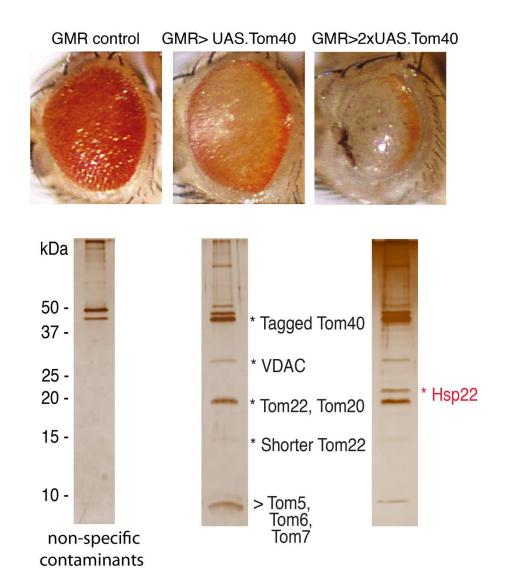
# Hsp22 small heat shock protein family

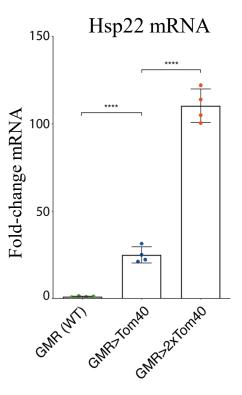






#### Hsp22 upregulates and associates with Tom40 under cell death conditions

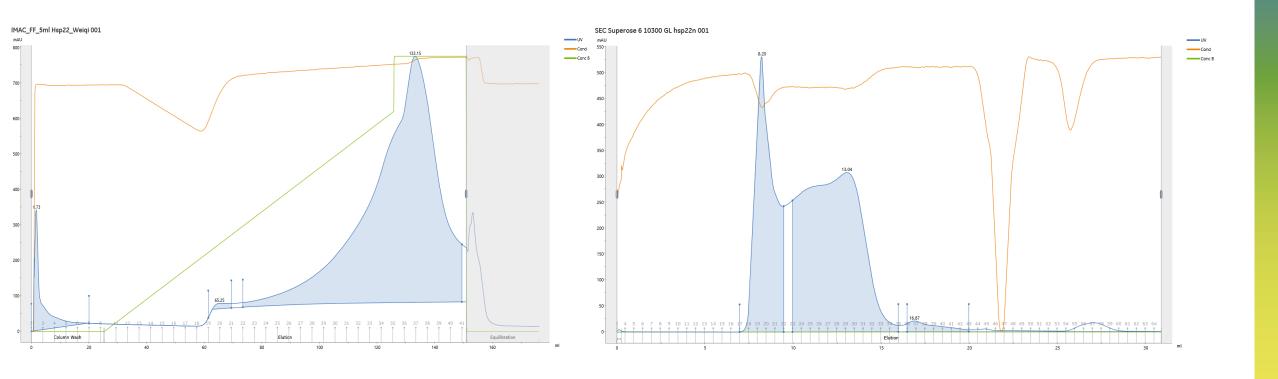








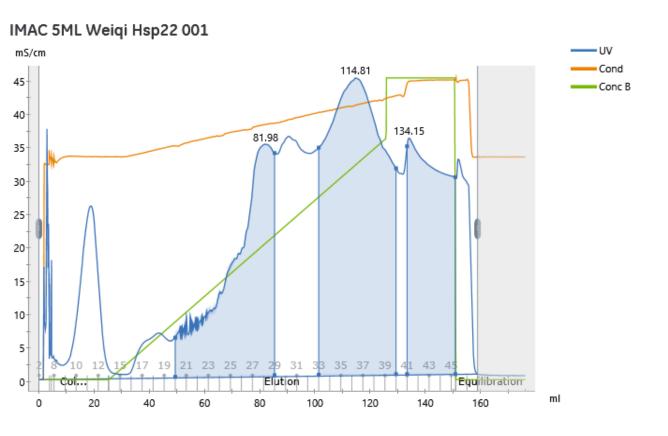
## First Prep

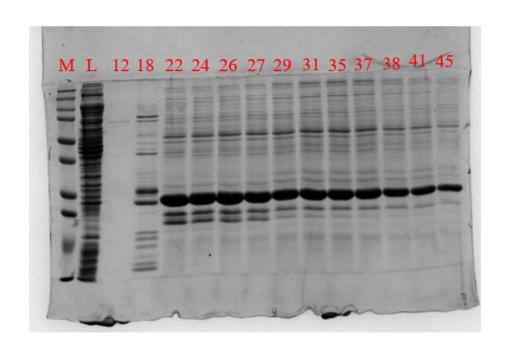






#### **Optimizing Conditions**



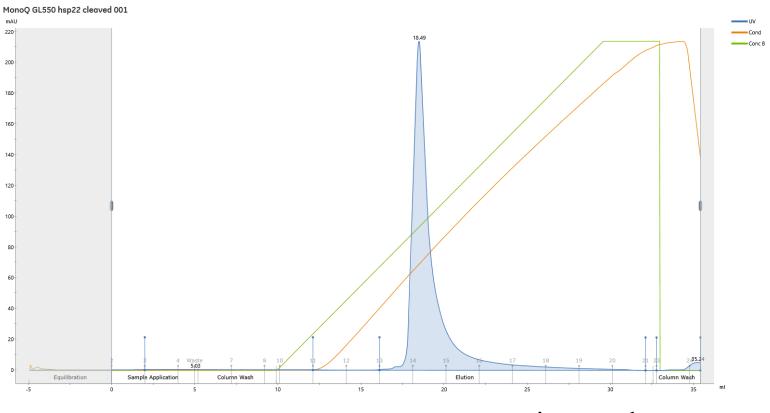


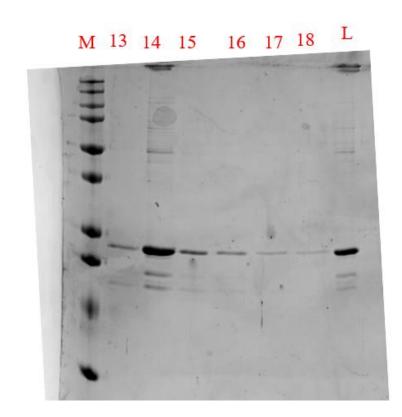
from phosphate buffer to tris buffer





### **Optimizing Conditions**





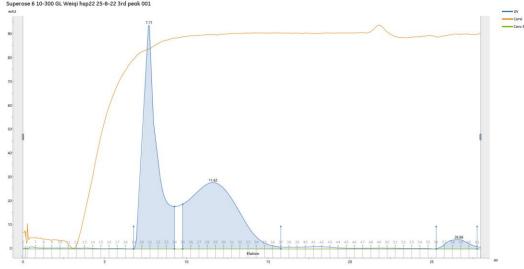
ion exchange

# Protein Preparation

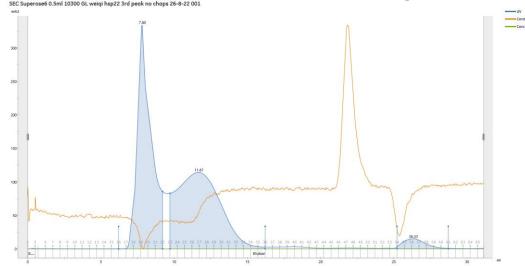
## **Optimizing Conditions**

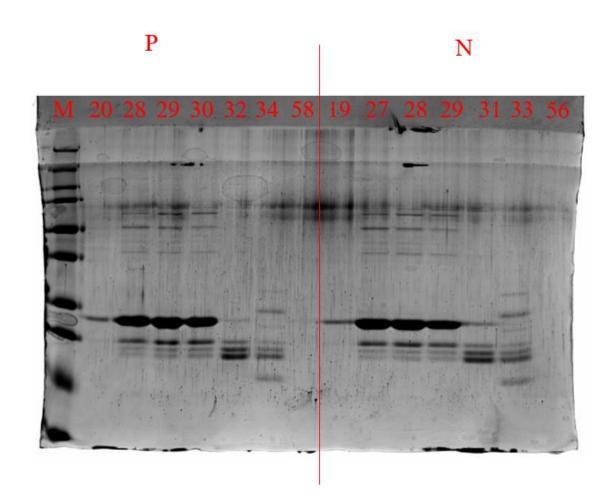


Gel filtration with detergent(chaps)



#### Gel filtration without detergent



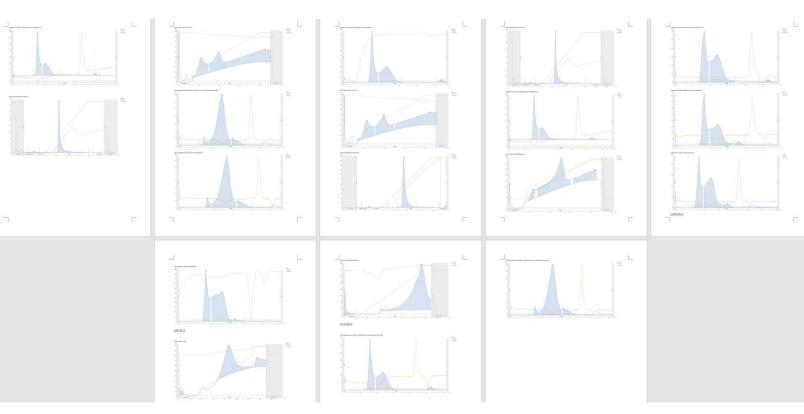




## **Optimizing Conditions**



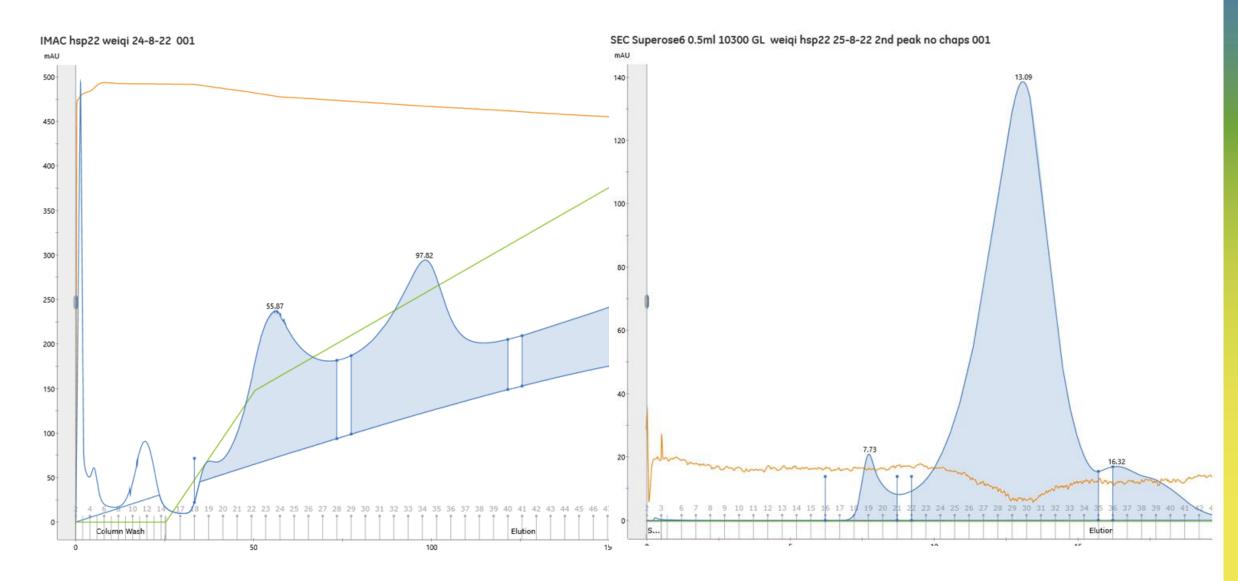




#### **Protein Preparation**

## Final Prep With a Magical Hand

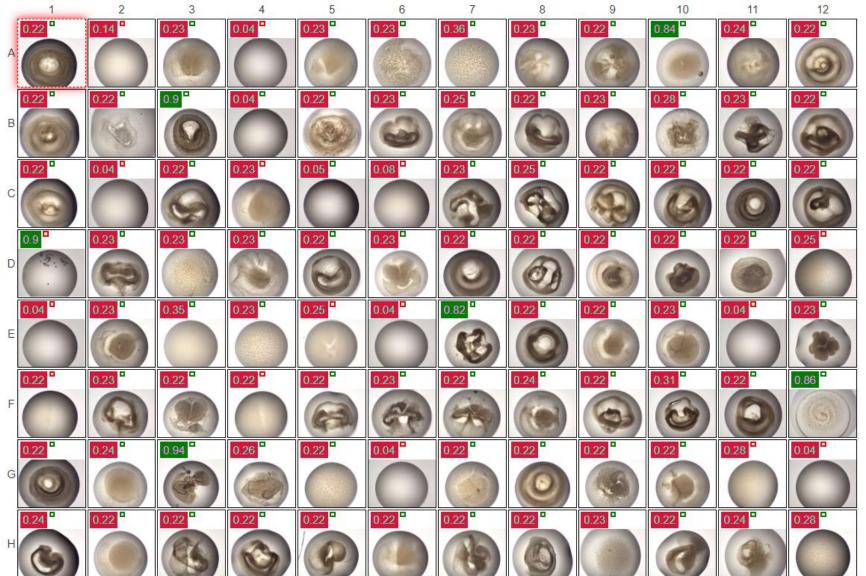




#### **Structural Analysis**



#### **Crystal Screen**



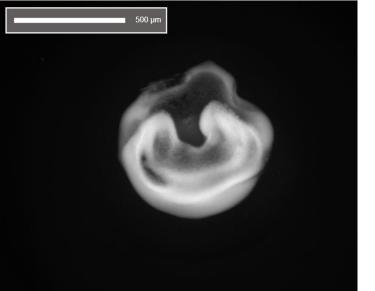


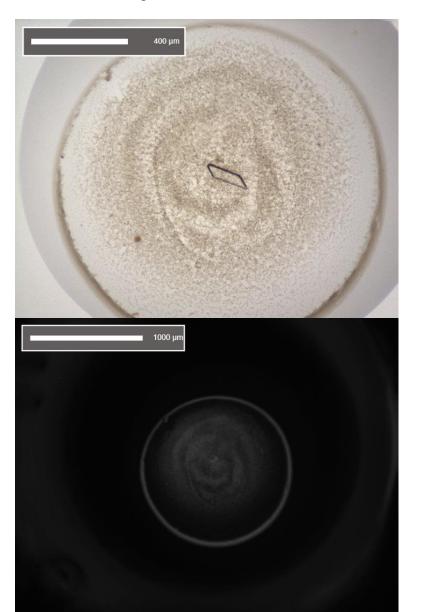
#### Structural Analysis

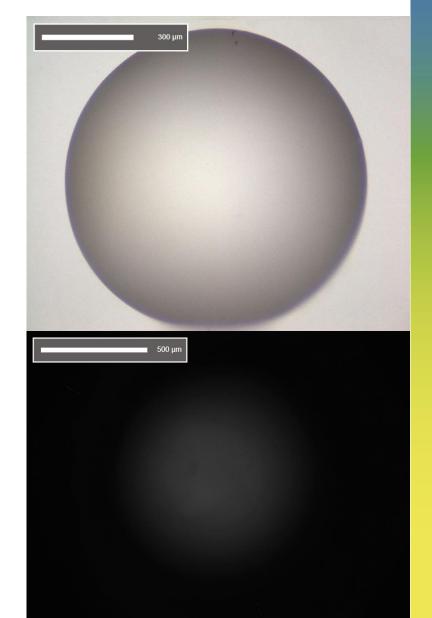
## **Crystal Screen**





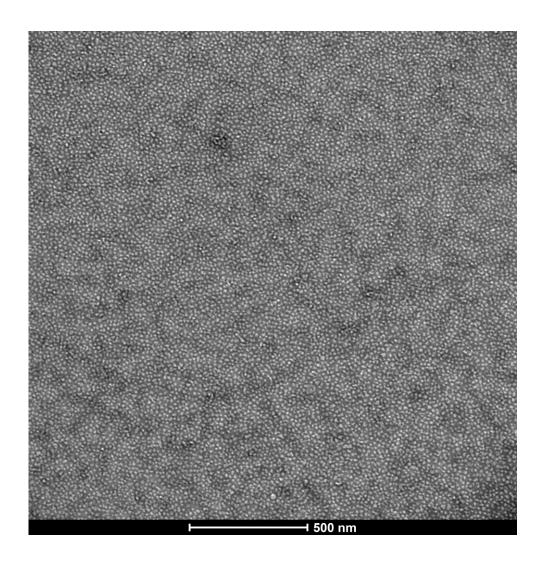


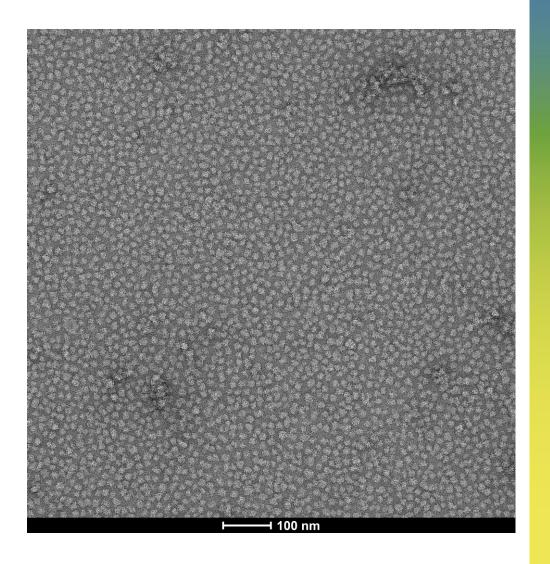






## **TEM + Negative Stain**





### Structural Analysis



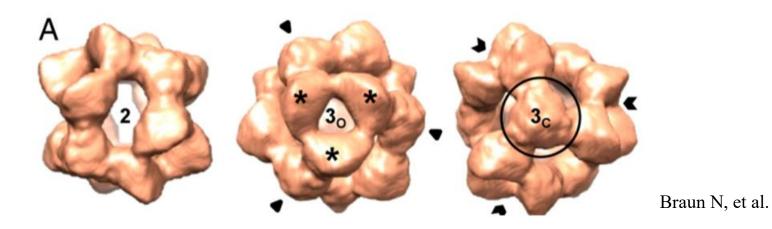
#### **2D-Classification**

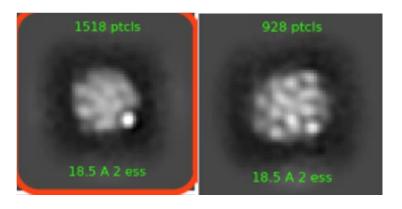
1518 ptcls	1285 ptcls	1244 ptcis	1082 ptcls	1050 ptcls	1029 ptcls	950 ptcls	940 ptcls	928 ptcls	903 ptcls
150	350	53.	SEL.	586	10000	-		-S2-	400
100	1367	100	100	300		3300		10.0	
18.5 A 2 ess	21.6 A 2 ess	17.7 A 2 ess	13.4 A.2 ess	23,2 A 1 ess	52.2 A 2 ess	52.3 A 2 ess	52.6 A 2 ess	18,5 A 2 ess	25.0 A 2 ess
891 ptcls	889 ptcls	847 ptcis	846 ptcls	845 ptcls	837 ptcls	824 ptcls	818 ptcls	B17 ptcls	800 ptcls
	33	.00	1005			480	2	300	30
Physical Co.	The same			10000		AT WATER SEC.			No.
50.2 A 2 ess 796 ptcls	17.6 A 2 ess 793 ptcls	23.9 A 2 ess 778 ptcls	43.9 A 2 ess 775 ptcls	50.2 A 2 ess 741 ptcls	27.4 A Z ess 740 ptcis	17.1 A 2 ess 727 ptcls	16.1 A 2 ess 711 ptcls	51.8 A 2 ess 674 ptcls	50.8 A 2 ess 672 ptcls
approving.	9/01035	200	The same of the sa		400	1000		with.	September 1
	100		<b>基</b>	(7/2)		3	VIDE	100	38
59.9 A 2 ess	52.7 A 2 ess	51.2 A 2 ess	51.8 A 2 ess	51.8 A 2 ess	62.6 A 2 ess	50.5 A 2 ess		60.1 A 2 ess	59.9 A 2 ess
658 ptcls	647 ptcls	602 ptcls	582 ptcls	566 ptcls	563 ptcls	537 ptcls	460 ptcls	409 ptcls	408 ptcls
32	(A)	1000 kg	256	37.55	200	1000	1000	10000	100
0,000	3000	8	100		TIP.	1	BC - 21	No.	Sec. 3
63.4 A 2 ess	49.3 Å 2 ess	59.4 A 2 ess	22.3 A 2 ess	57.0 A 1 ess	22.9 A 2 ess	44.4 A 2 ess	24,9 A 2 ess	22,1 A 2 ess	26.9 A 2 ess
354 ptcls	330 ptcls	275 ptcls	251 ptcls	190 ptcls	170 ptcls	134 ptels	113 ptcls	102 ptcls	52 ptcls
10.40	OVER!	(177)	1000	30	ES 28	200	20.00		700
		1	Sec.	357	200		G 450	- 38	76
30.3 A 2 ess	58.2 A 4 ess	38.6 A 7 ess	29.4 A 2 ess	20.6 A 2 ess	28.0 A 2 ess	31.6 A 2-ess	21,5 A 7 ess	59,7 A 2 ess	51,4 A 7 ess

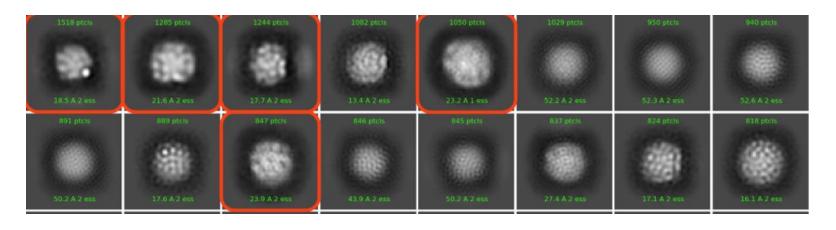




### Compared with aB-crystallin

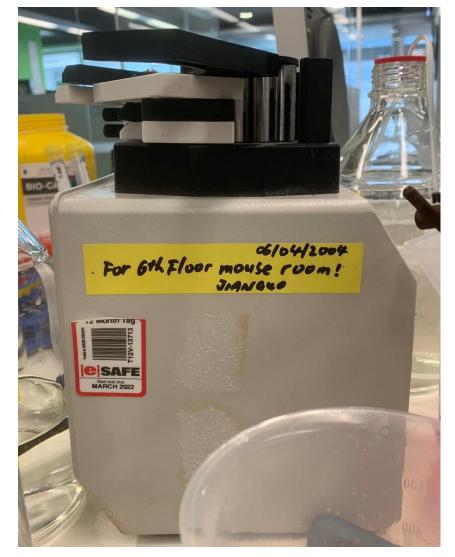








# **Legacy from Jianguo Best Pump in the Division**

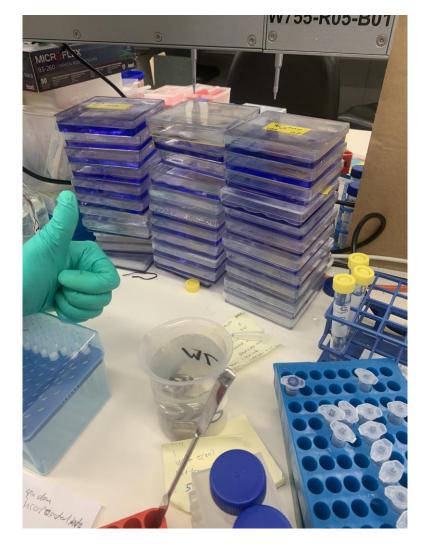




## Acknowledgement



## **Hardworking Honours**



### "Sleep is for the weak" - Muhab





#### Acknowledgement



# **Long-lost Skill Handmaking Gels**











## Thank you





