

**CREASALLIS**

The Creative Antibody Solutions Company

# Improving Antibody Drug Tumour Penetration via CreaTap

**Zahra Jawad, PhD**

CEO and Founder

# Creasallis Scientific and Support Team



**Zahra Jawad, PhD**  
CEO Founder

- PhD in Protein Engineering (University of Cambridge).
- 17 years biotech/pharma experience in antibody engineering.
- Track record of delivering drug candidates to IND.



**Joyce Ratti, PhD**  
Head of Protein Sciences

- PhD in protein structure and NMR
- >10 years experience in antibody expression and purification in industry.
- Track record of setting up protein sciences capabilities and processes in industry.



**Dennis Underwood, PhD**  
Advisor

- >30 years in biotech/pharma leadership.
- Extensive R&D experience in small molecule and antibody drug development.



**Catherine Goodrich**  
Advisor

- 20 years experience in growing startups to scaleups.
- Extensive experience in large pharma and biotech.
- Professional coach specifically for the lifesciences sector.

GSK domantis bit.bio

lifeArc agenus

Lonza ABZENA

agenus

Bristol Myers Squibb DUPONT

agenus MERCK

Adobe MiNK Therapeutics

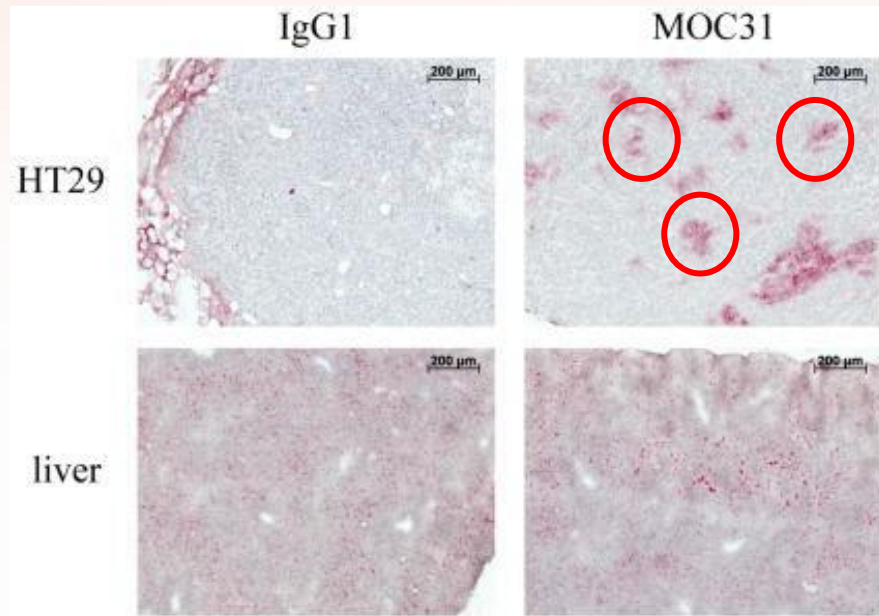
Monte Rosa THERAPEUTICS agenus

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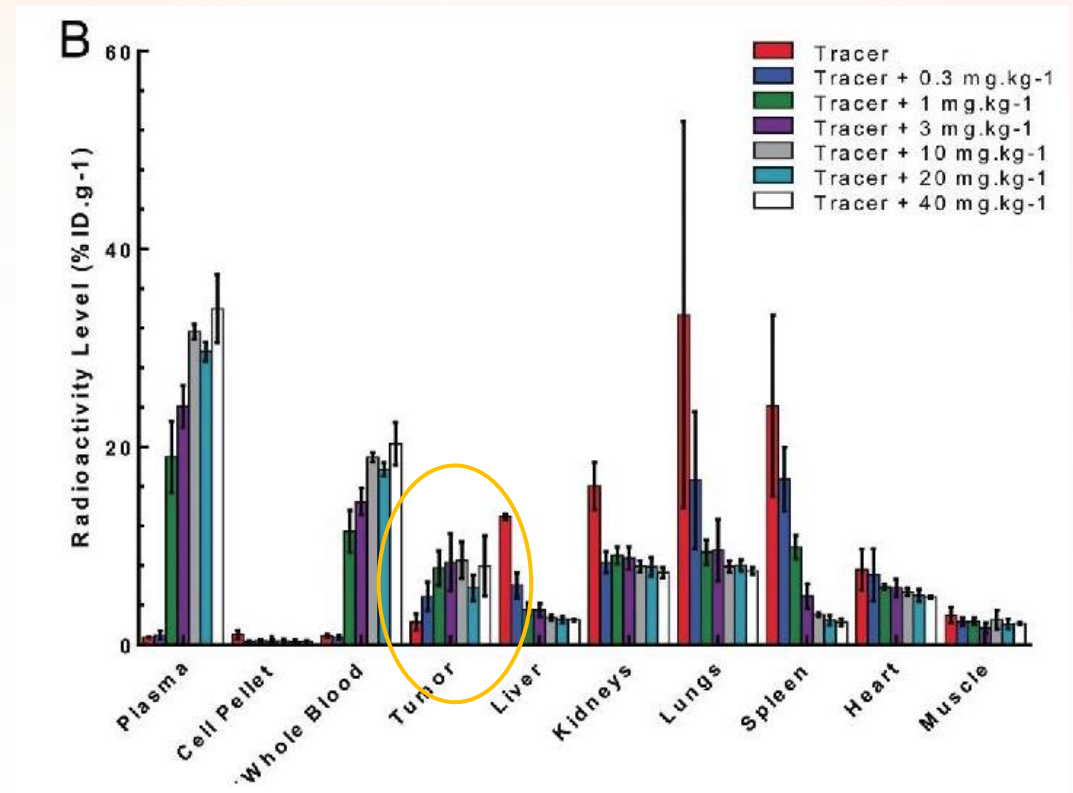


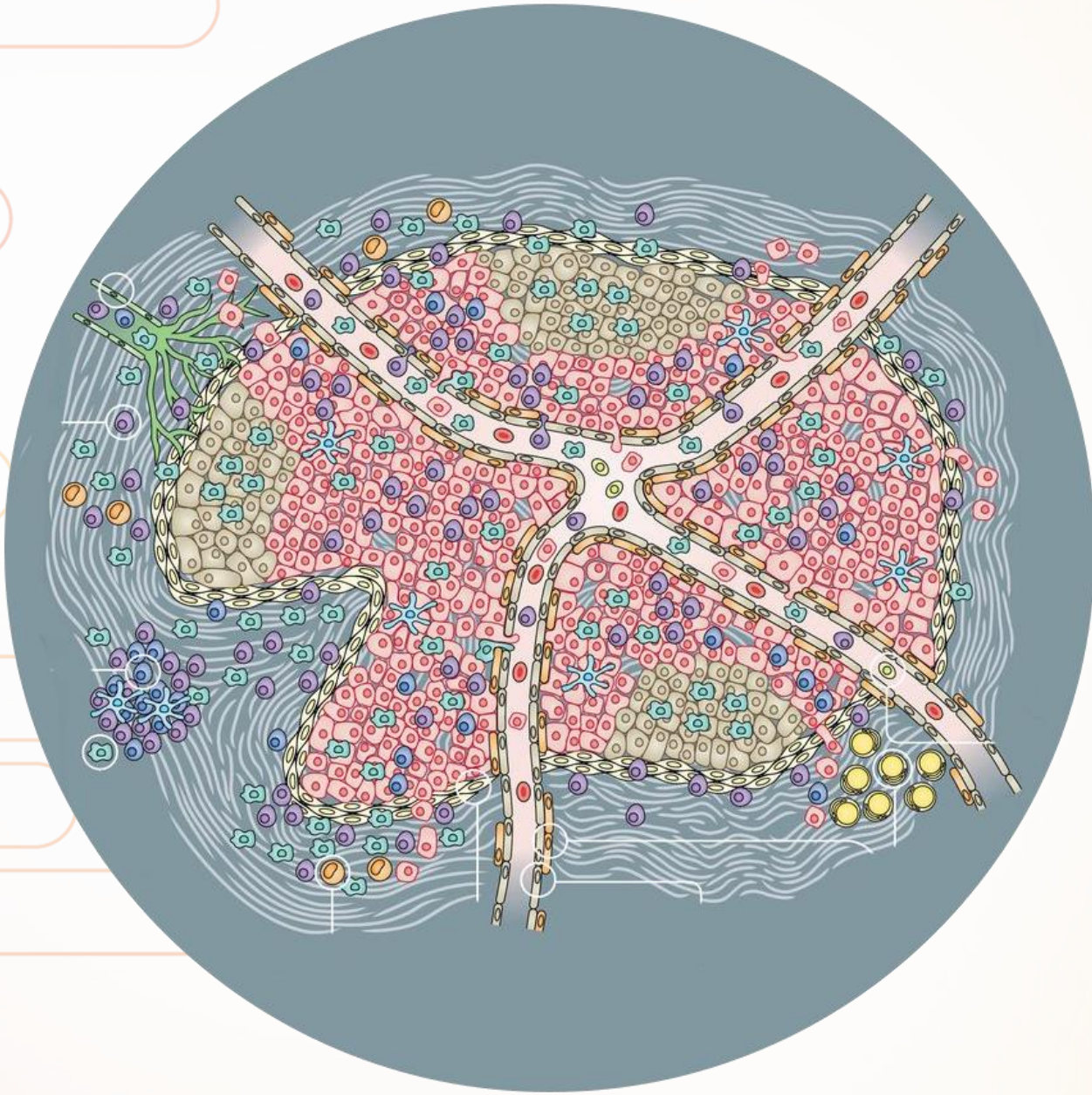
# Therapeutic Monoclonal Antibodies do not Penetrate Tumours well

Anti-EpCAM labelled antibody shows limited staining in HT29 tumours – limited to areas of good vasculature (highlighted)



Low level uptake observed in the tumour in comparison to other tissue





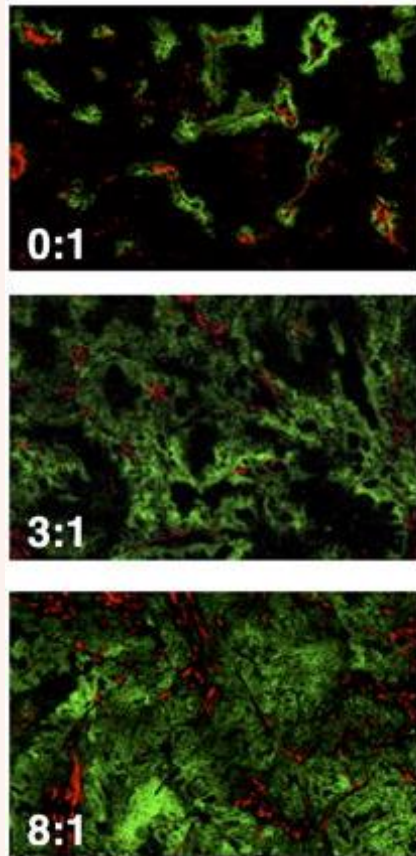
**The Tumour is  
Hostile to the  
Movement of  
Macromolecules**



# Increased Antibody Penetration Gives Better Clinical Outcomes

## An ADC Case Study

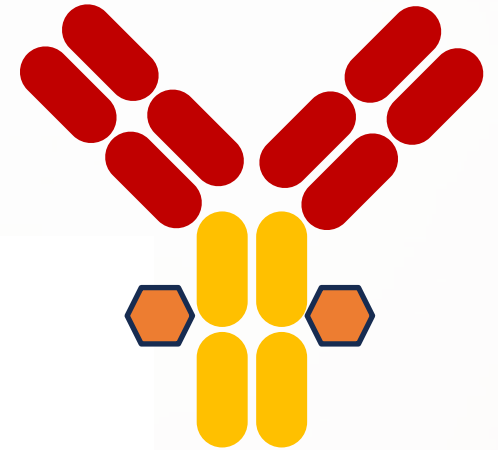
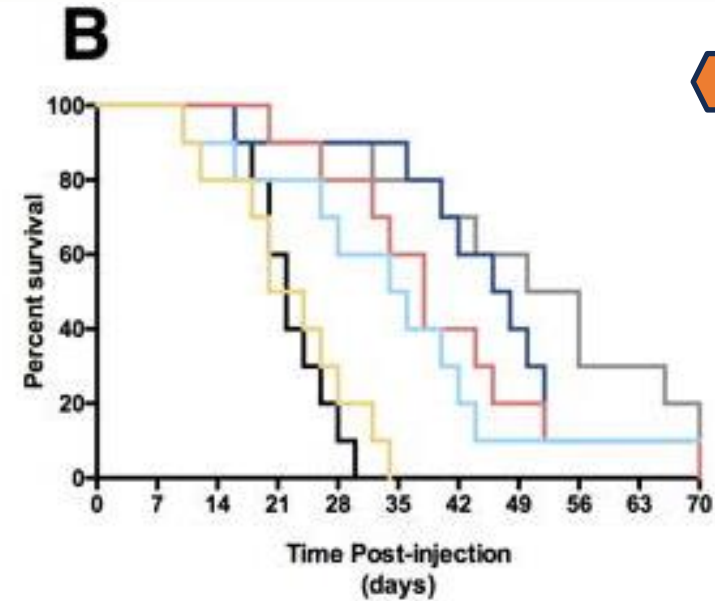
Increased Tumour Penetration



	PR	CR	DCR
Untreated	0	0	0
T-only (3:0)	0	0	0
T-DM1 only (0:1)	1	0	1
1:1 (T to T-DM1)	3	0	0
3:1 (T to T-DM1)	5	0	1
8:1 (T to T-DM1)	3	1	1

3.6 mg/kg T-DM1 for all groups

PR: > 50% reduction in tumor size  
 CR: no detectable tumor  
 DCR: no detectable or recurring tumor



Improved Efficacy



Where most of the field lies. Drug penetration is a problem with few solutions

# Nobody has Developed a Solution to High Penetration and Sustained Half Life



sustained half life



Low penetration

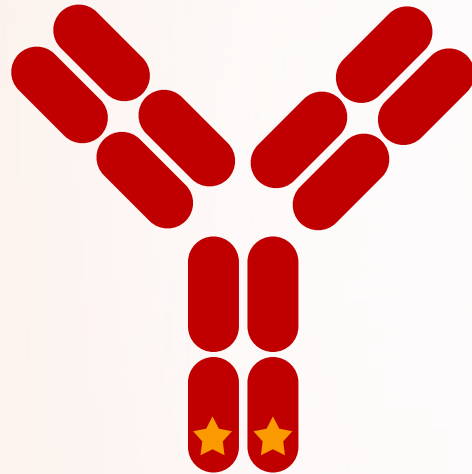
High penetration



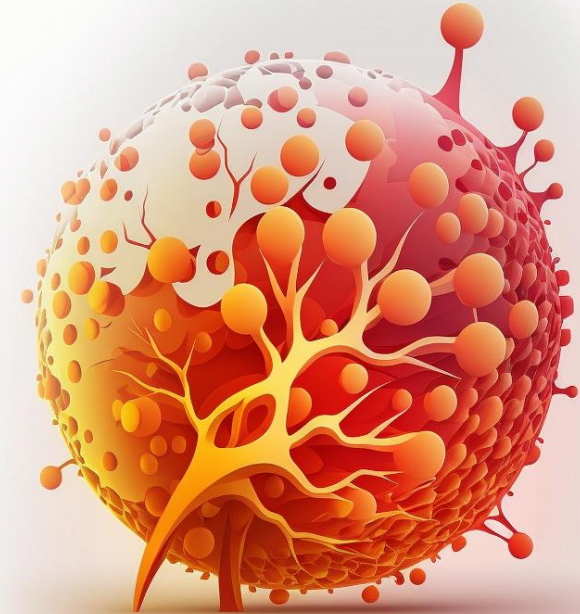
reduced half life



# CreaTap Improves the Penetration of Antibodies into the Tumour for Novel and Existing Antibodies



→  
Tumour  
Microenvironment

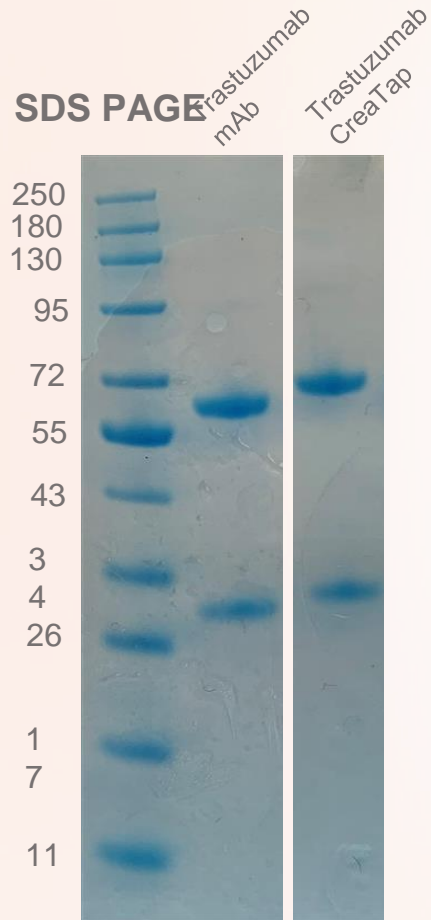


CreaTap are a set of modifications in the constant region of an antibody to aid tumour penetration through a novel mechanism of action.

**Single plug and play engineering**



# CreaTap Does Not Change the Attributes of Monoclonal Antibodies

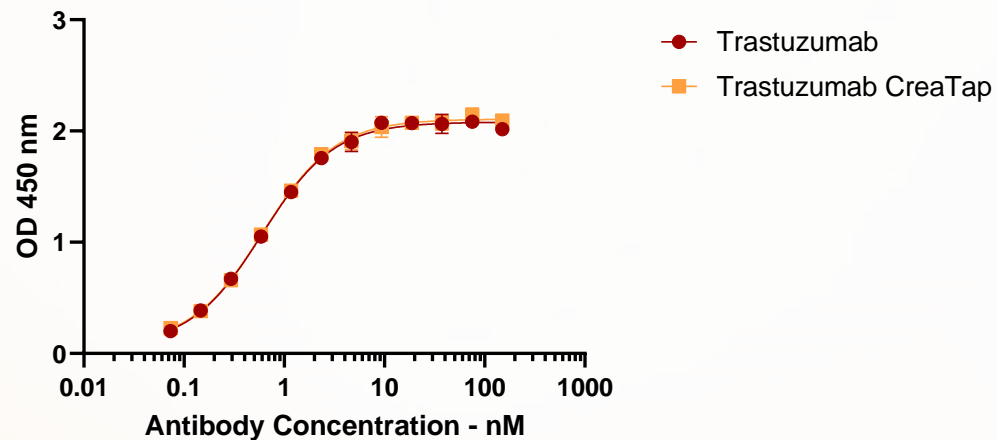


## Biophysical Stability

Sample ID	Buffer	Monomer relative area (%)	DSF		SLS
			T <sub>M1</sub> (°C)	T <sub>M2</sub> (°C)	T <sub>AGG</sub> (°C)
Trastuzumab [mAb]	DPBS	98.5	69.8	-	67.1
Trastuzumab [CreaTap]		94.3	70.7	-	70.7

## Binding

### Comparison of Binding of Trastuzumab and CreaTap to Her2



	Trastuzumab	Trastuzumab CreaTap
IC50	0.6029	0.6161



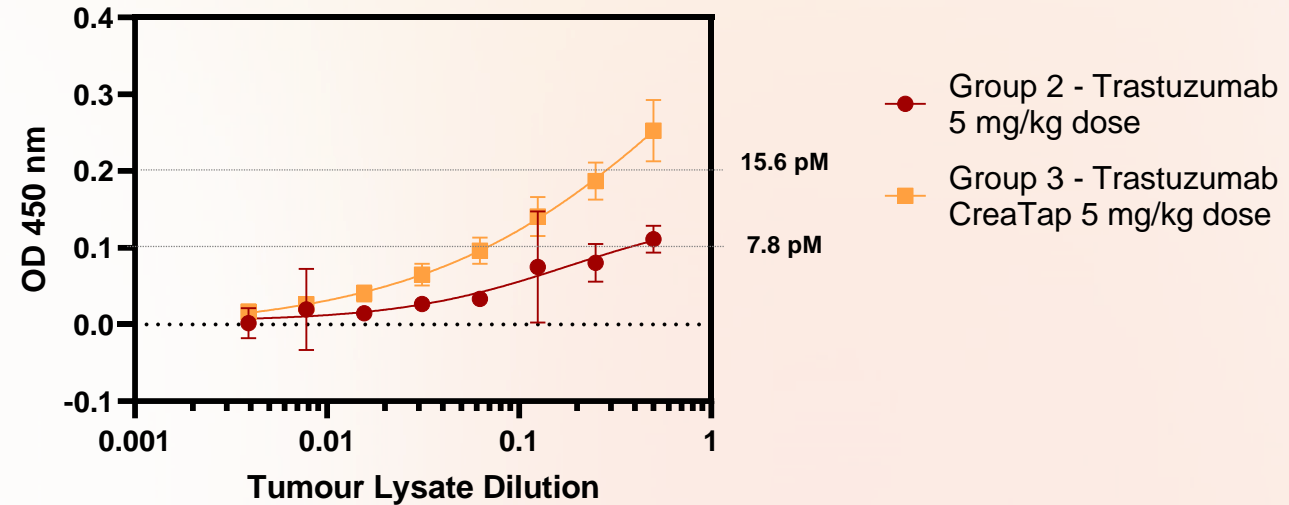


# CreaTap Technology Improves Antibody Penetration by at least 2-fold In vivo

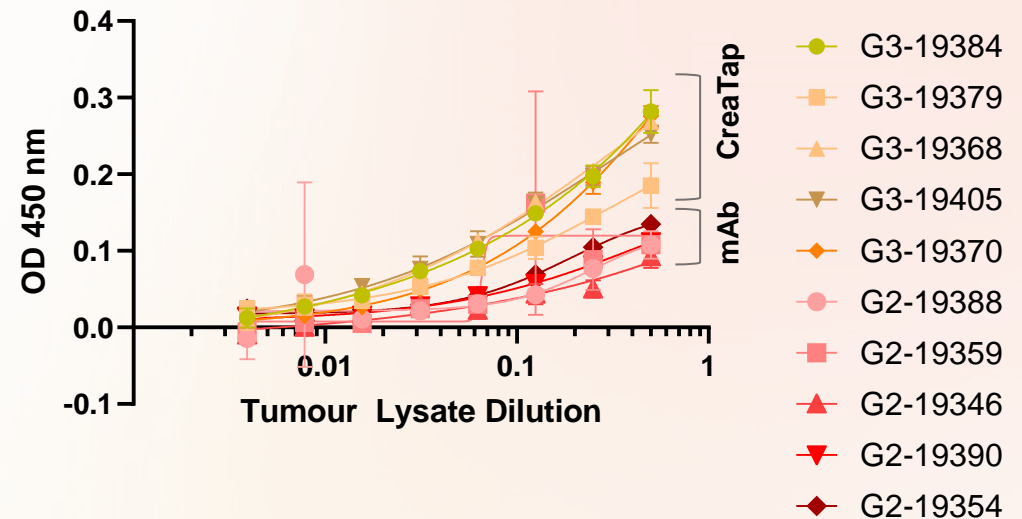


- Nude mouse with 300 mm<sup>3</sup> Xenograft ovarian tumour
- 24 hour
- Single dose at 5 mg/kg
- 5 mice/group

Binding of Tumour Samples to Human Her2



Binding of Tumour Samples to Human Her2

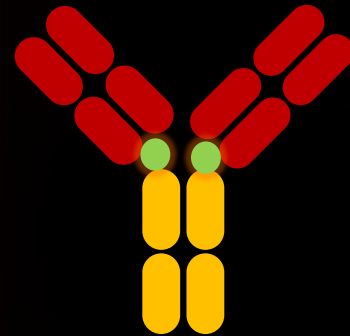
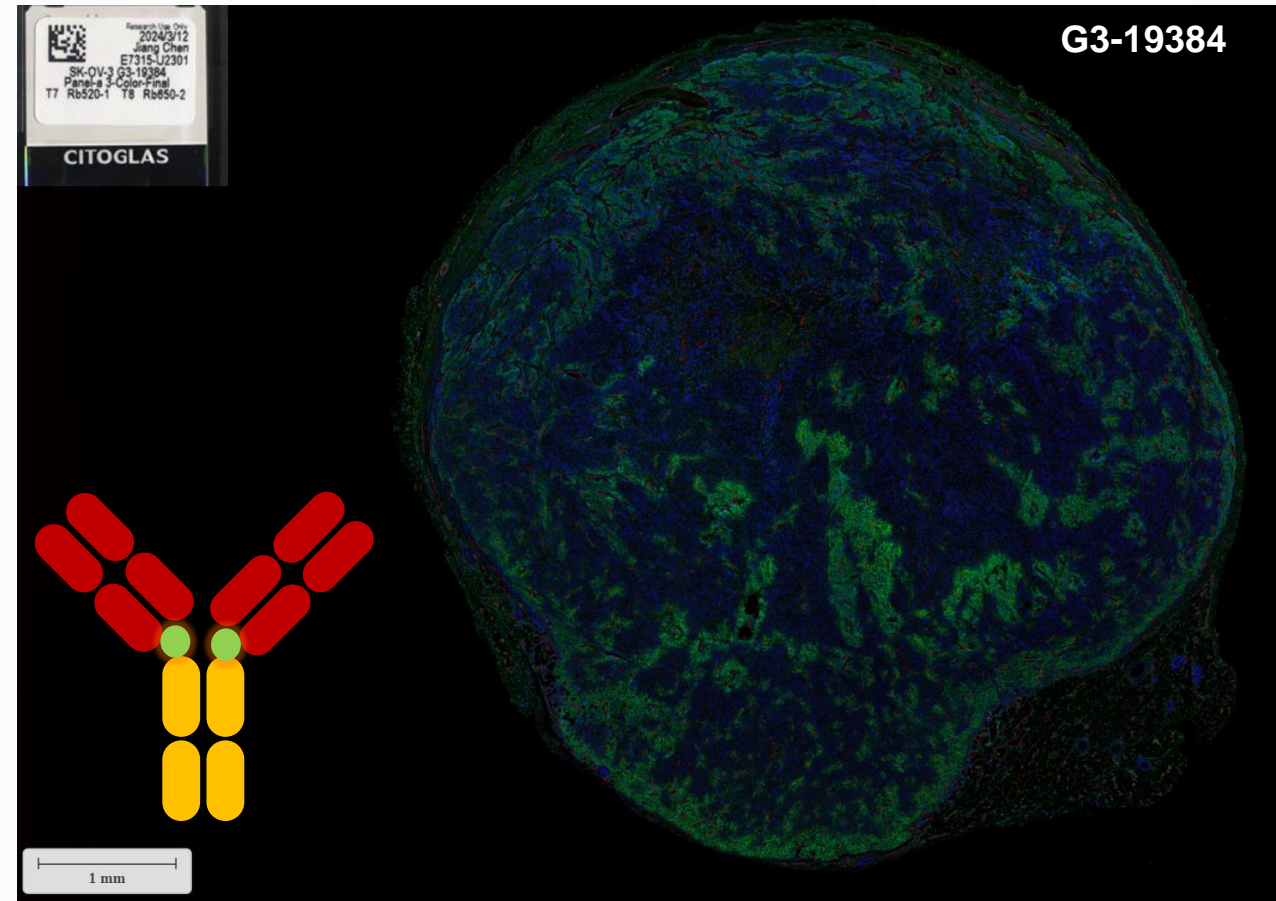
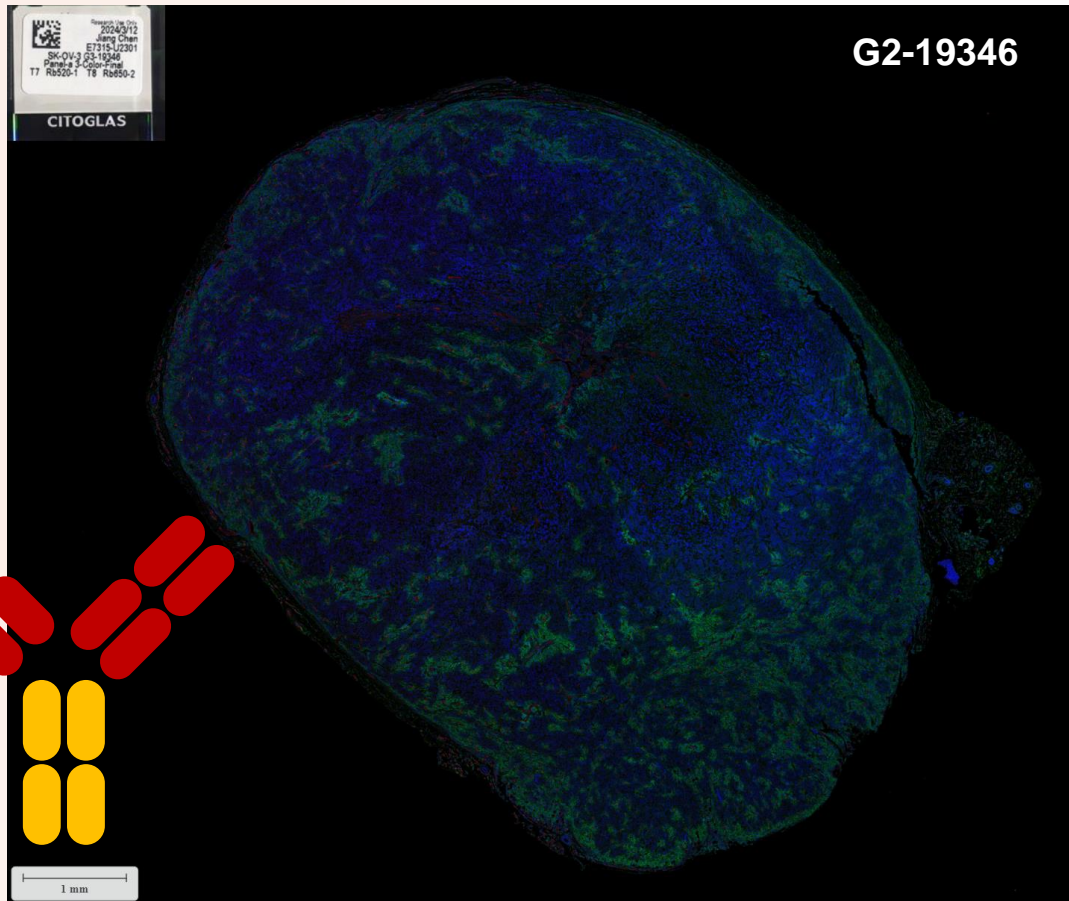


# IHC Staining Reveals Deeper Penetration of CreaTap engineered Antibodies into Large Solid Tumours

DAPI  
Anti-Fab  
Anti CD31  
1x magnification

Trastuzumab

Trastuzumab CreaTap D3



# CreaTap Contains the Best Attributes from Antibody Fragments and Monoclonal Antibodies

	CreaTap	Monoclonal Antibody	Nanobody	Small Molecule
Specificity for the tumour	✓	✓	✓	✗
Long half life	✓	✓	✗	✗
Tumour penetrability	✓	✗	✓	✓
Reduced side effects	✓	✓	✓	✗
Administration of lower dosage	✓	✗	✗	✗
Simple manufacturing process	✓	✓	✓	✓



# 3-Step Approach to Building a CreaTap Therapeutics Portfolio

## Clinically Validated Antibodies

- CreaTap with clinically validated antibodies
- Leverage existing regulatory and clinical plans
- Demonstrate an enhanced therapeutic index.

### Examples:

- anti-Her2
- anti-PD1
- anti-EGFR
- anti-VEGF

## Industrial Collaborations

- Targets that show promise in phase II clinical trials
- Collaboration with pharma/biotech with an offer of lifecycle management
- Demonstrate an enhanced therapeutic index
- Revenue generating

### Examples:

- anti-Claudin 14.2
- anti-41BB
- EnHerTu (ADC)

## Novel Antibody Therapeutics

- Novel targets addressing unmet needs
- Targeting of antibodies with poor safety profiles
- Will need to new regulatory/clinical plans (longer timelines)

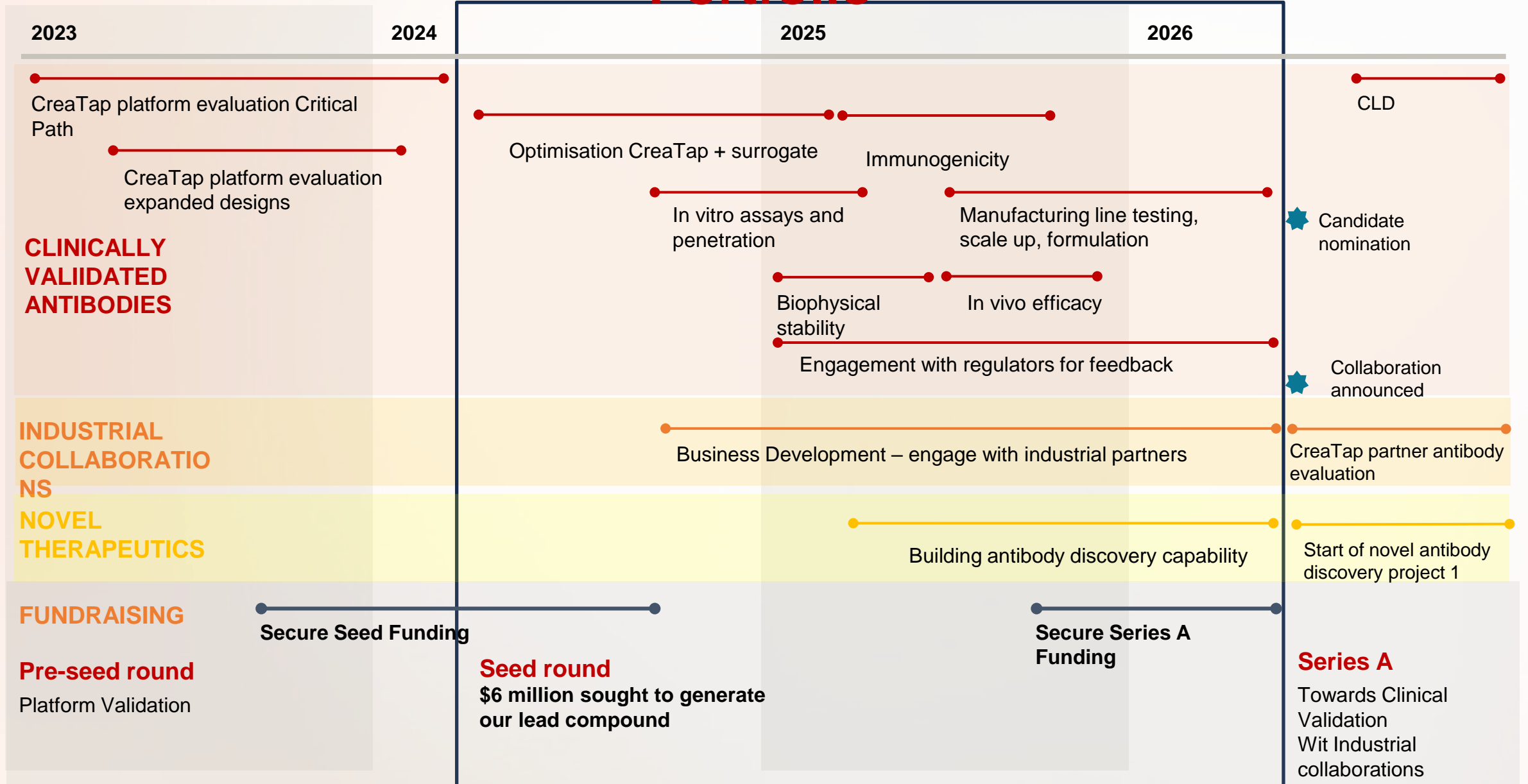
### Examples:

- Undisclosed targets
- ADCs
- biologics



# We Will Work Closely With Partners and Develop Our Own Portfolio

Confidential



# Get in touch

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CEO and Founder

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