

Robust heavy chain – light chain pairing solutions for generating clinical bi- and multispecific antibodies

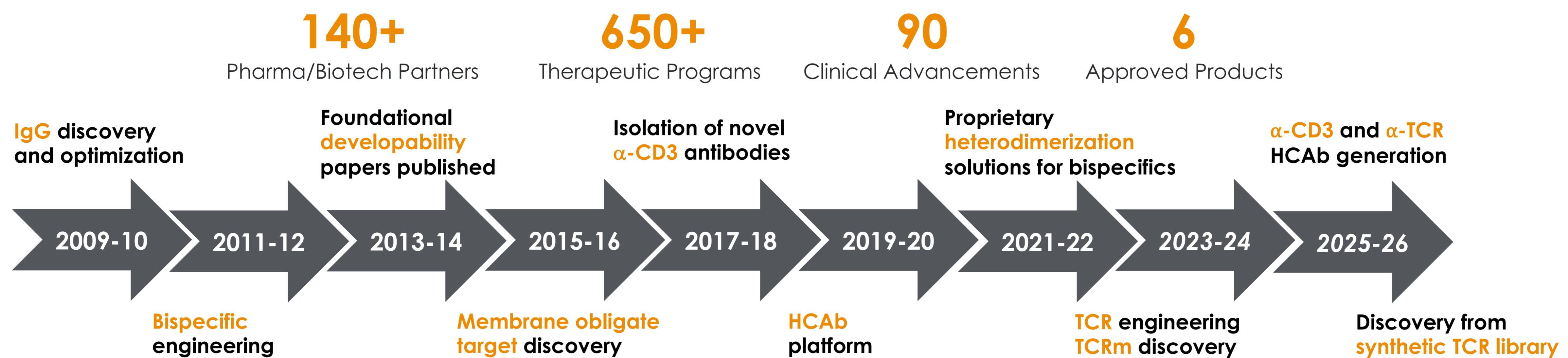
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ADIMAB

BACKGROUND

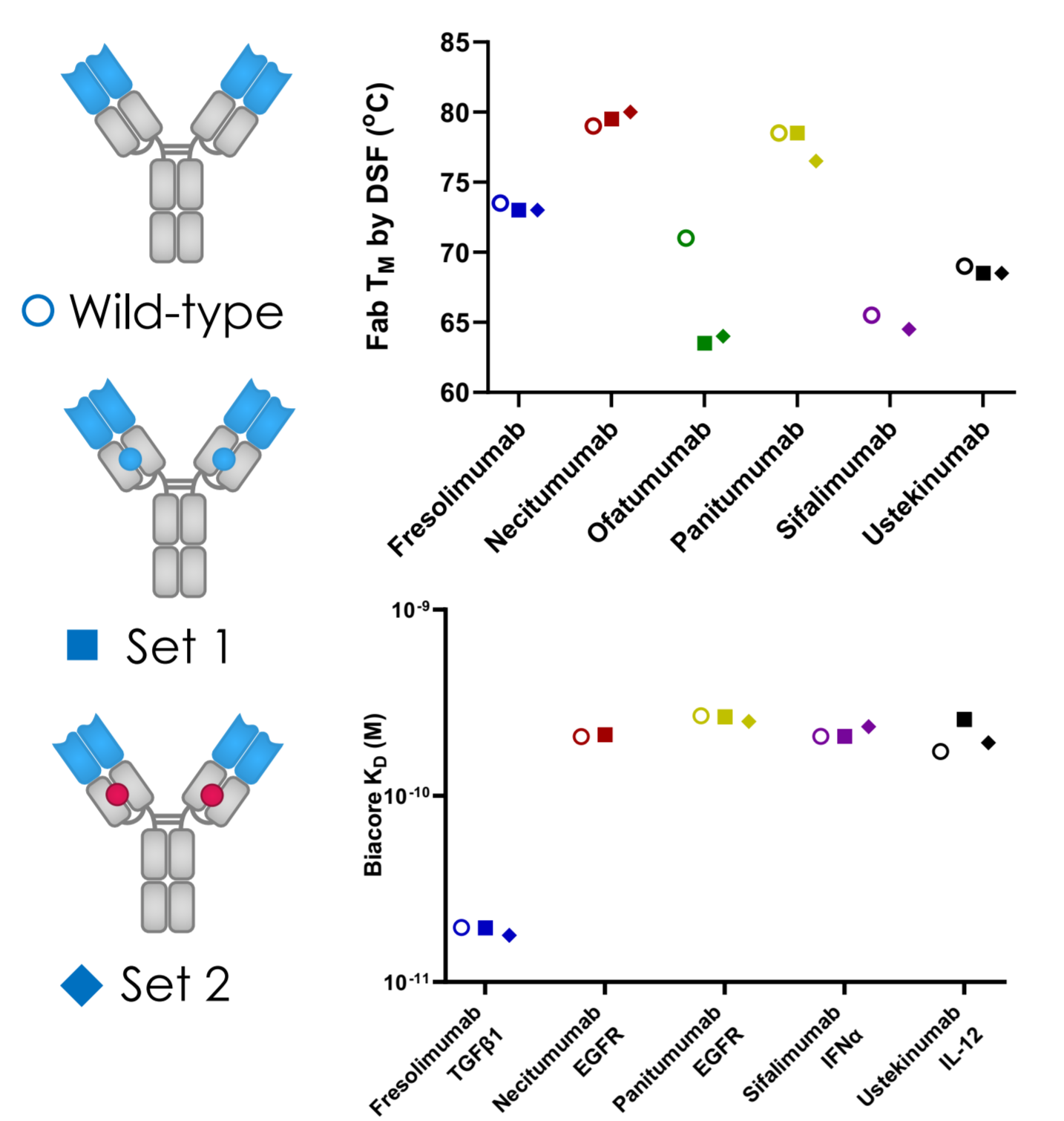
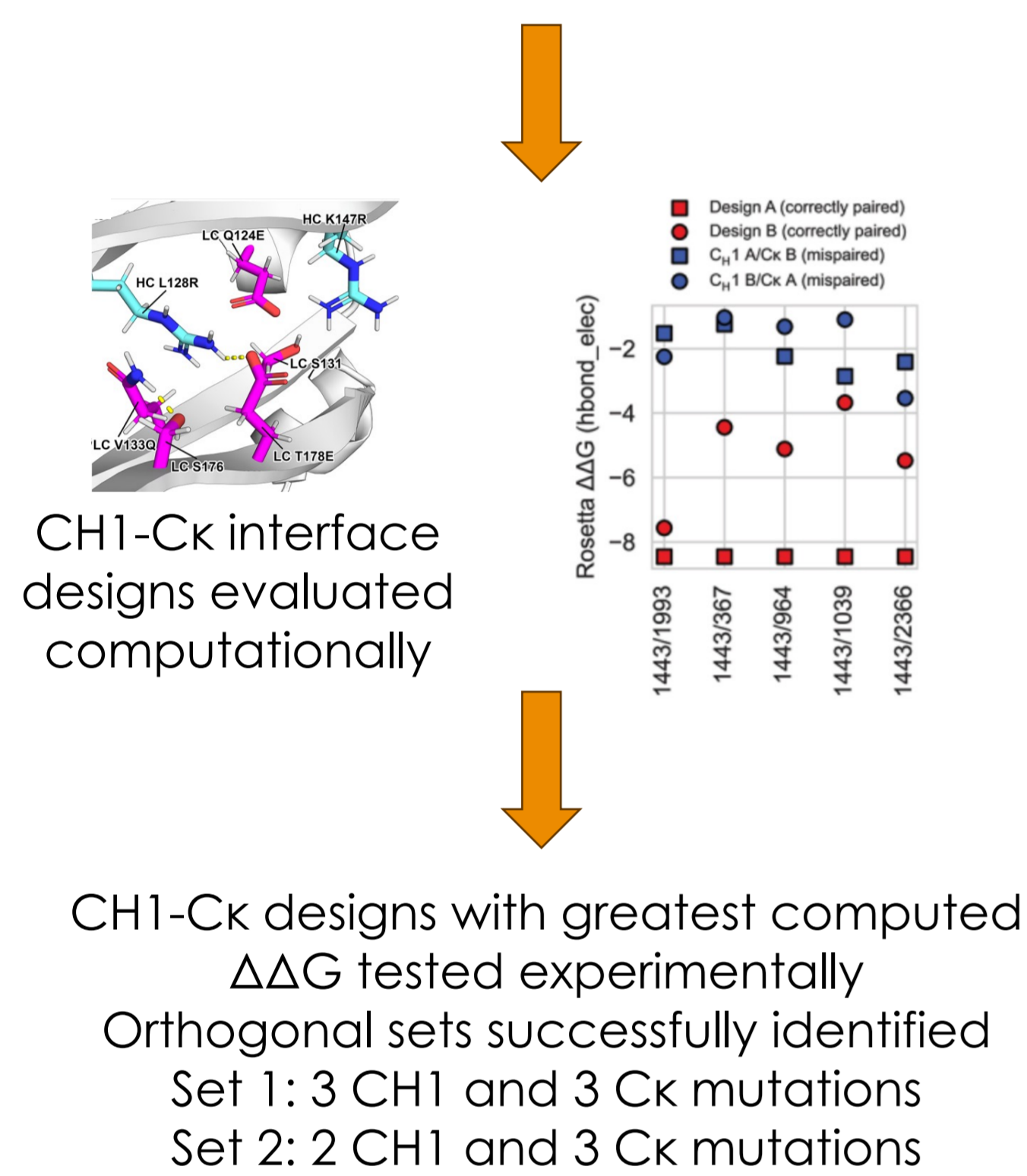
Adimab's discovery and optimization platform excels in identifying diverse, highly specific, and developable antibody panels. In addition to discovery, Adimab has developed technology for assembling multispecific antibodies, leading to clinical development. Here we present the design and validation of orthogonal CH1-Ck interfaces for correct heavy chain – light chain pairing.



Designing CH1-Ck heterodimerization¹

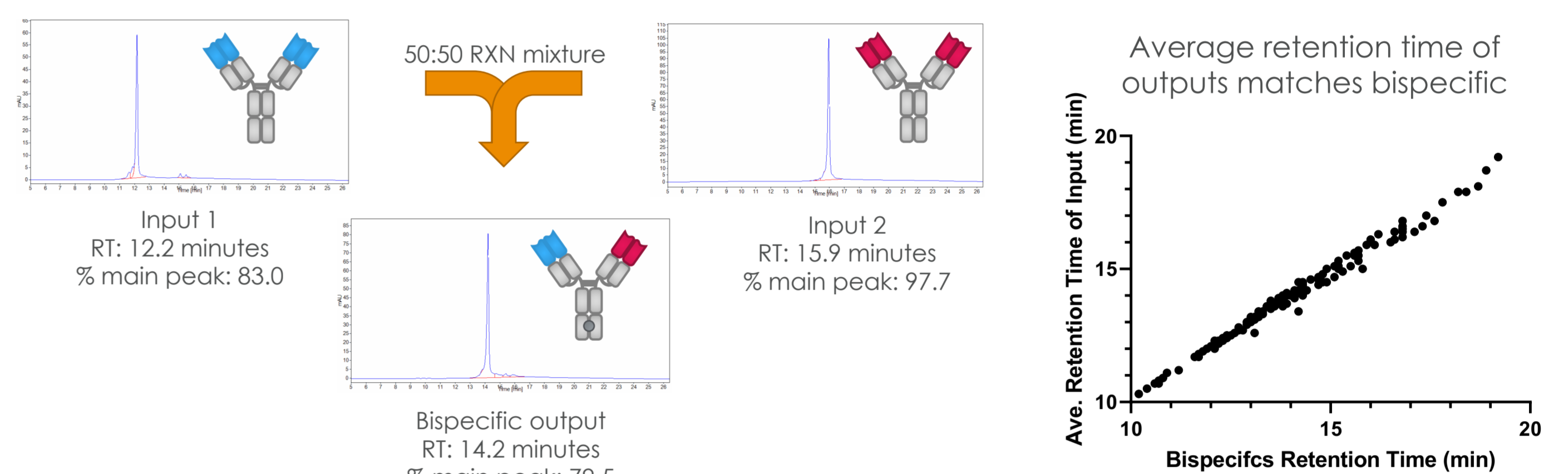
CH1-Ck interface designed computationally

CH1-Ck mutations do not alter target binding or biophysical properties

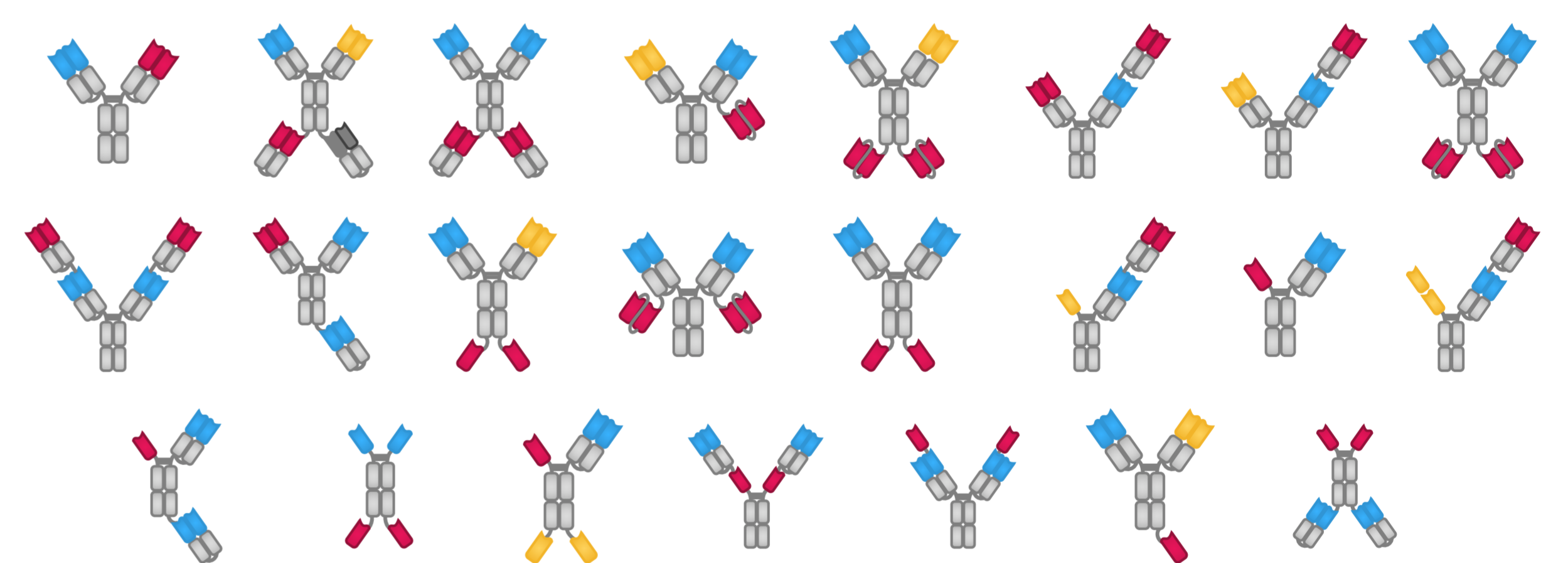


Developing multispecific antibodies at Adimab

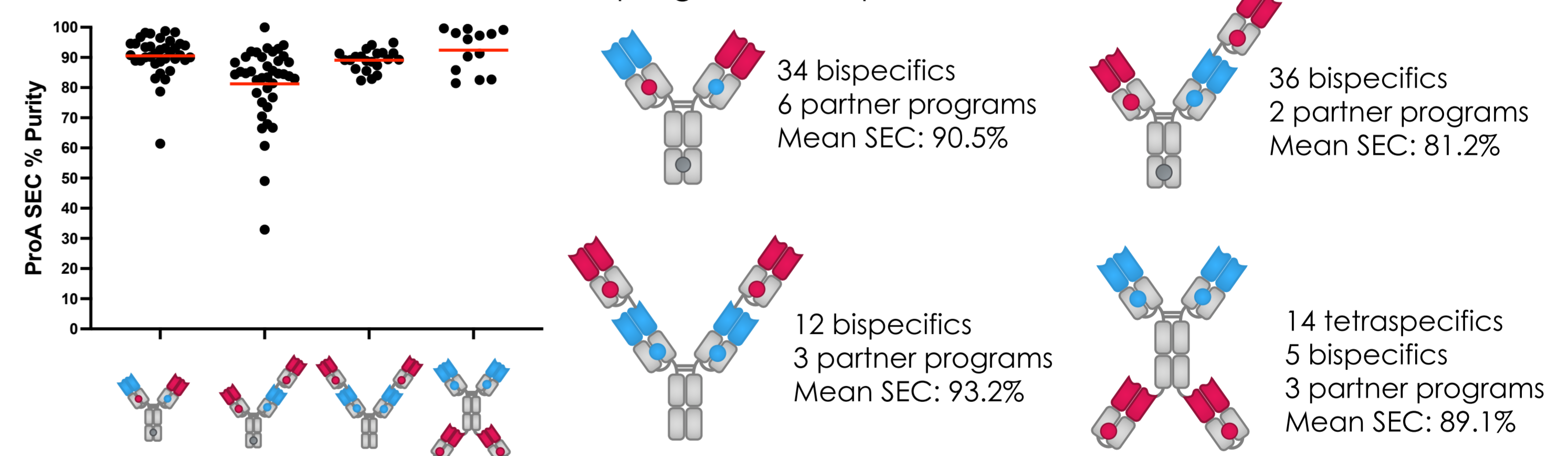
Chain exchange allows for rapid production of large multispecific panels



Delivery of >20 formats and >1200 samples to partners in the past two years
Screening formats leads to production in single transient transfection



Delivery of >100 multispecifics with CH1-Ck mutations in transient CHO in the past two years
10 programs for 8 partners



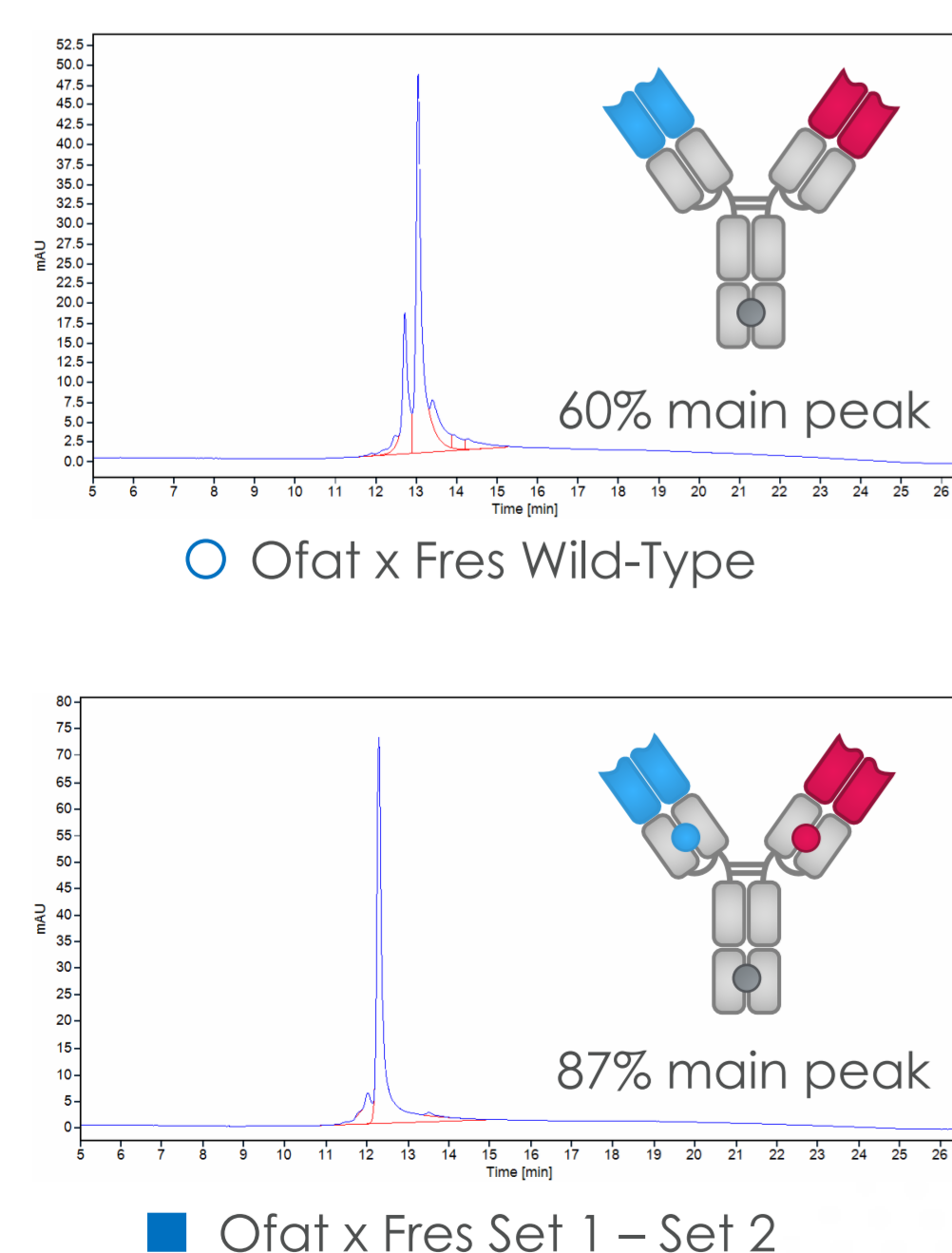
Testing CH1-Ck heterodimerization

Heterodimerization mutations tested in five bispecific pairs

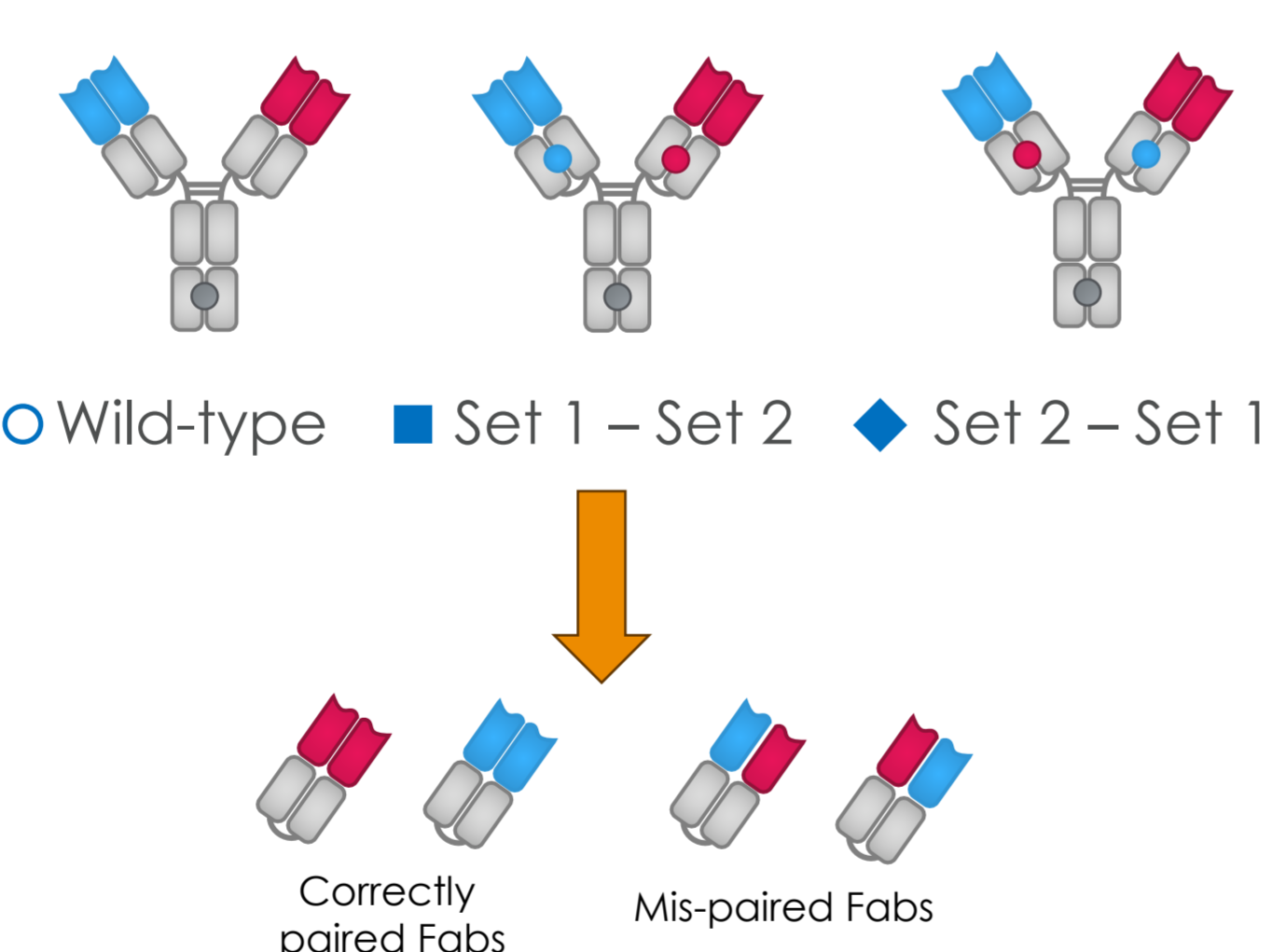
Index	Variable 1	Variable 2
◆	ofatumumab	fresolimumab
◆	necitumumab	fresolimumab
◆	necitumumab	sifalimumab
◆	ofatumumab	sifalimumab
◆	panitumumab	ustekinumab

Antibody pairs picked based on:
1. Good biophysical properties
2. HC-LC promiscuity among pairs
3. Human V-regions

ProA purified bispecific mixture run on analytical ion exchange

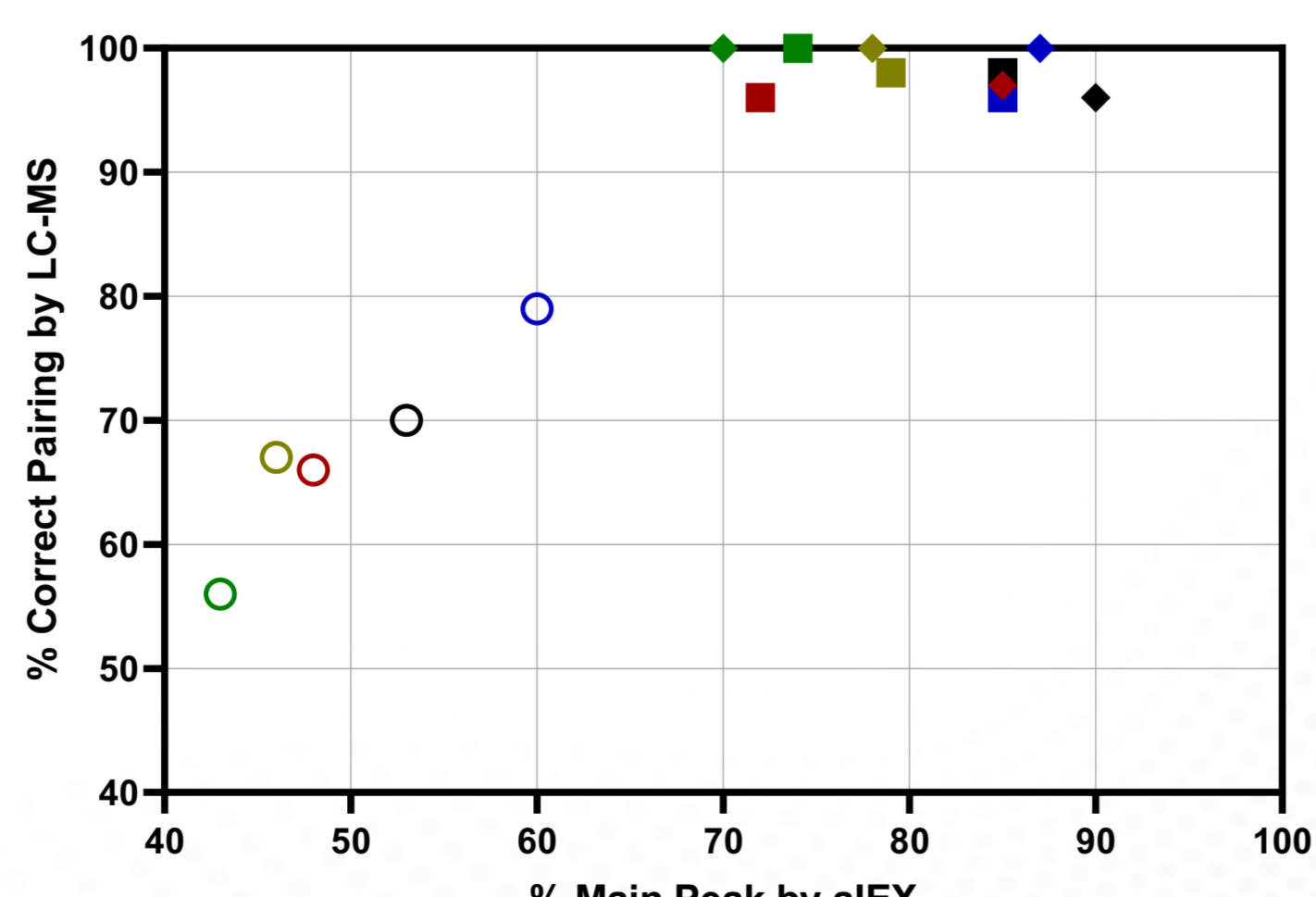


Each antibody pair tested in three constructs

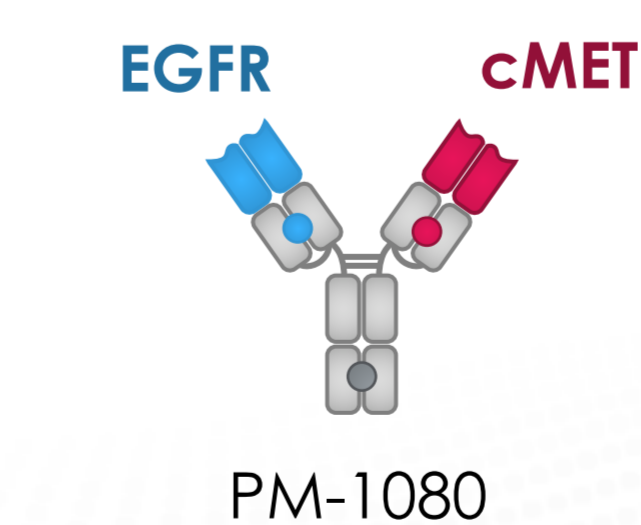


Mass spec bispecific quantitation:
1. ProA purified samples digested to Fabs
2. Fabs run on LC-MS
3. Peaks integrated for quantitation

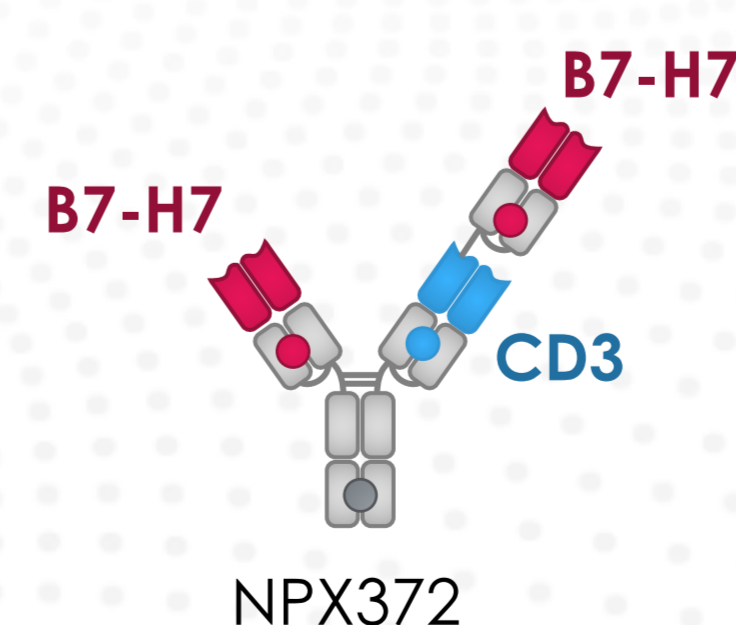
CH1-Ck mutations drive 100% correct pairing



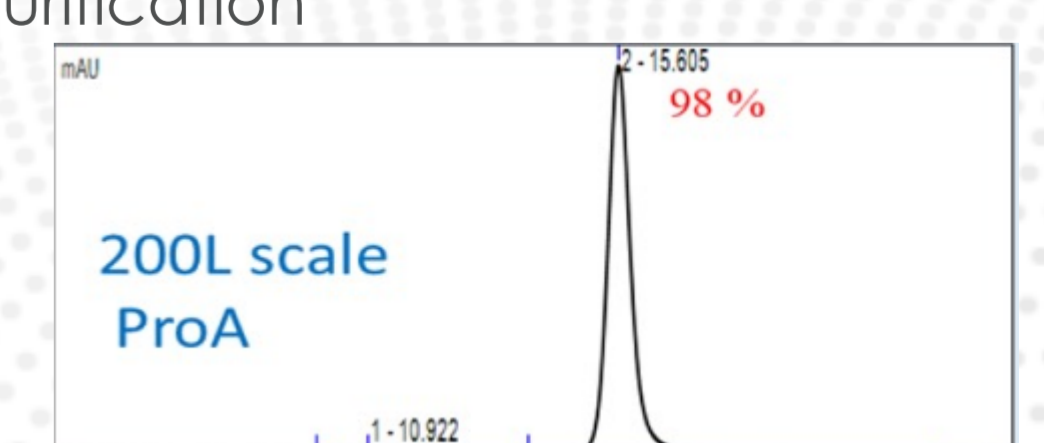
CH1-Ck heterodimerization in clinical bispecifics



Adimab partner Biotheus moves PM-1080 into Phase III
Stable cell line titer 6 g/L
High purity after ProA column purification
No HC-LC mispair



Adimab partner NextPoint moves NPX372 into Phase I
Incorporates Adimab CD3 binder²
B7-H7 binder from Adimab discovery platform



Acknowledgments and references:

We thank our partners at NextPoint and Biotheus. All members of the Adimab scientific and engineering teams contributed to this technology.

1. Barlow et al., *MABs* 2025 Dec;17(1). 2. Liu et al., *MABs* 2023 Jan-Dec; 15(1).

Contact Adimab

If you are interested in partnering with Adimab, please reach out to our Business Development department at bd@adimab.com.

The QR code on the right links to Adimab posters and other resources.

