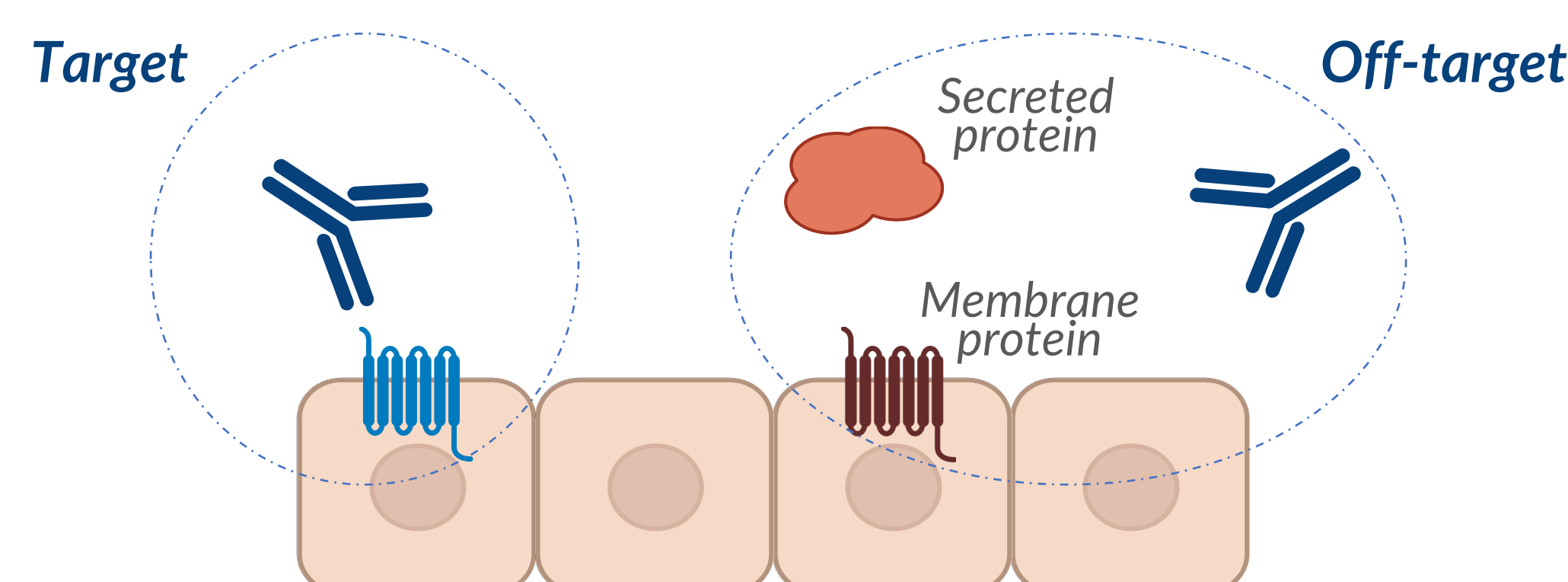


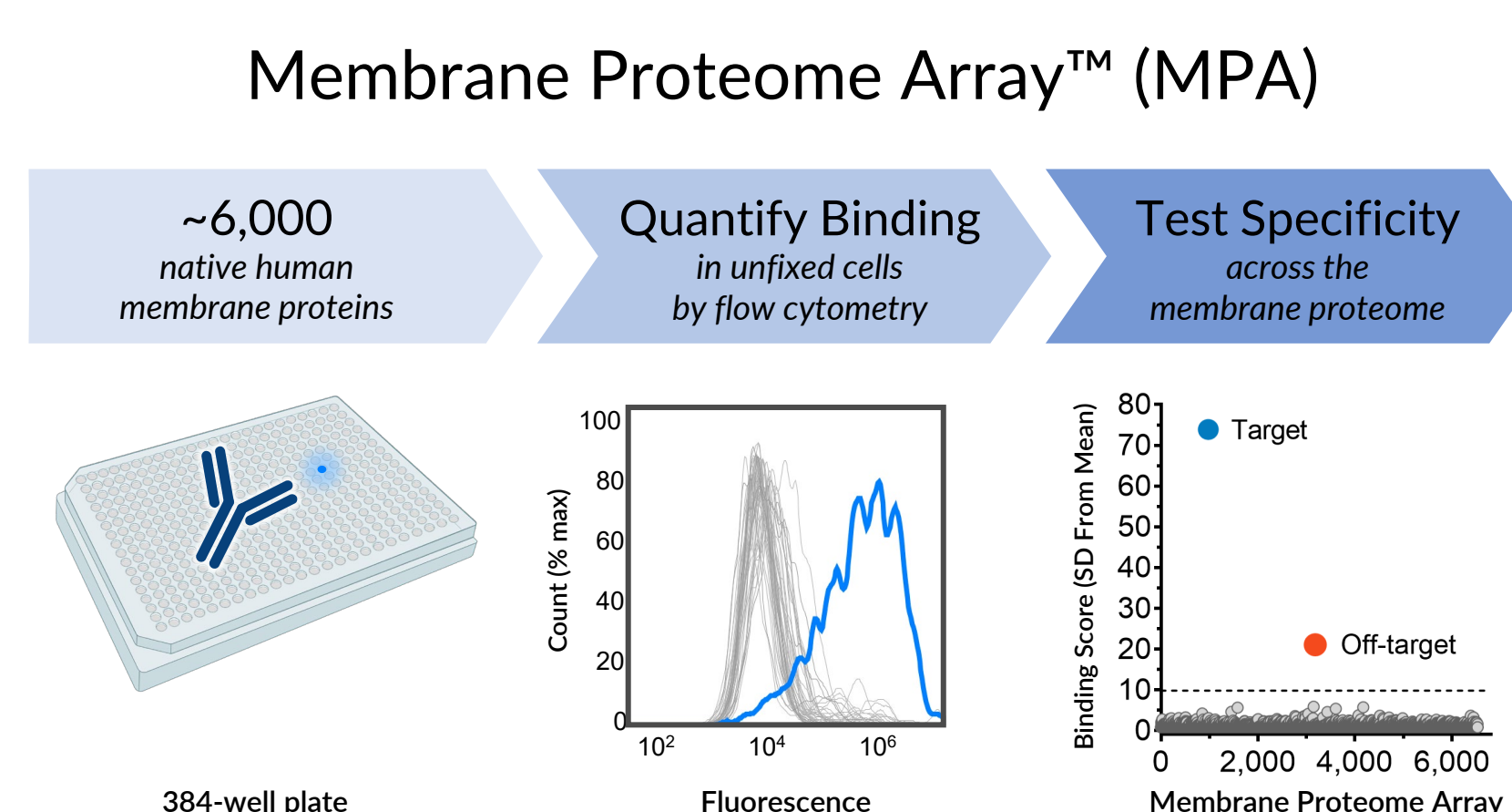
Specificity Testing is Essential to De-Risk Antibody Development

Off-Target Binding Can Affect Safety and Efficacy



Problem: Off-target binding to membrane and secreted proteins can result in toxicity and decreased efficacy from less drug at the target tissue

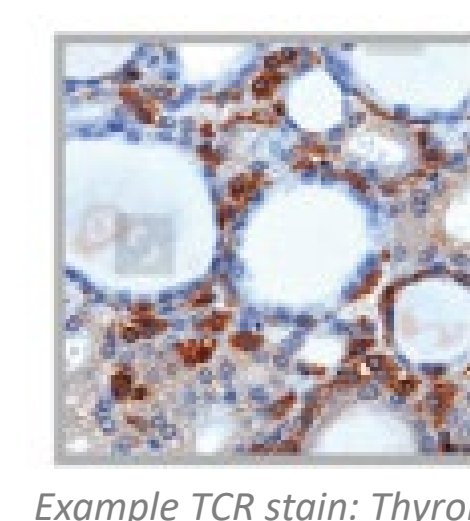
Membrane Protein Specificity



- Compatible with all biotherapeutic modalities
- Proteins screened under unfixed conditions to maintain native conformations
- Used in 100+ IND submissions

Secreted Protein Specificity

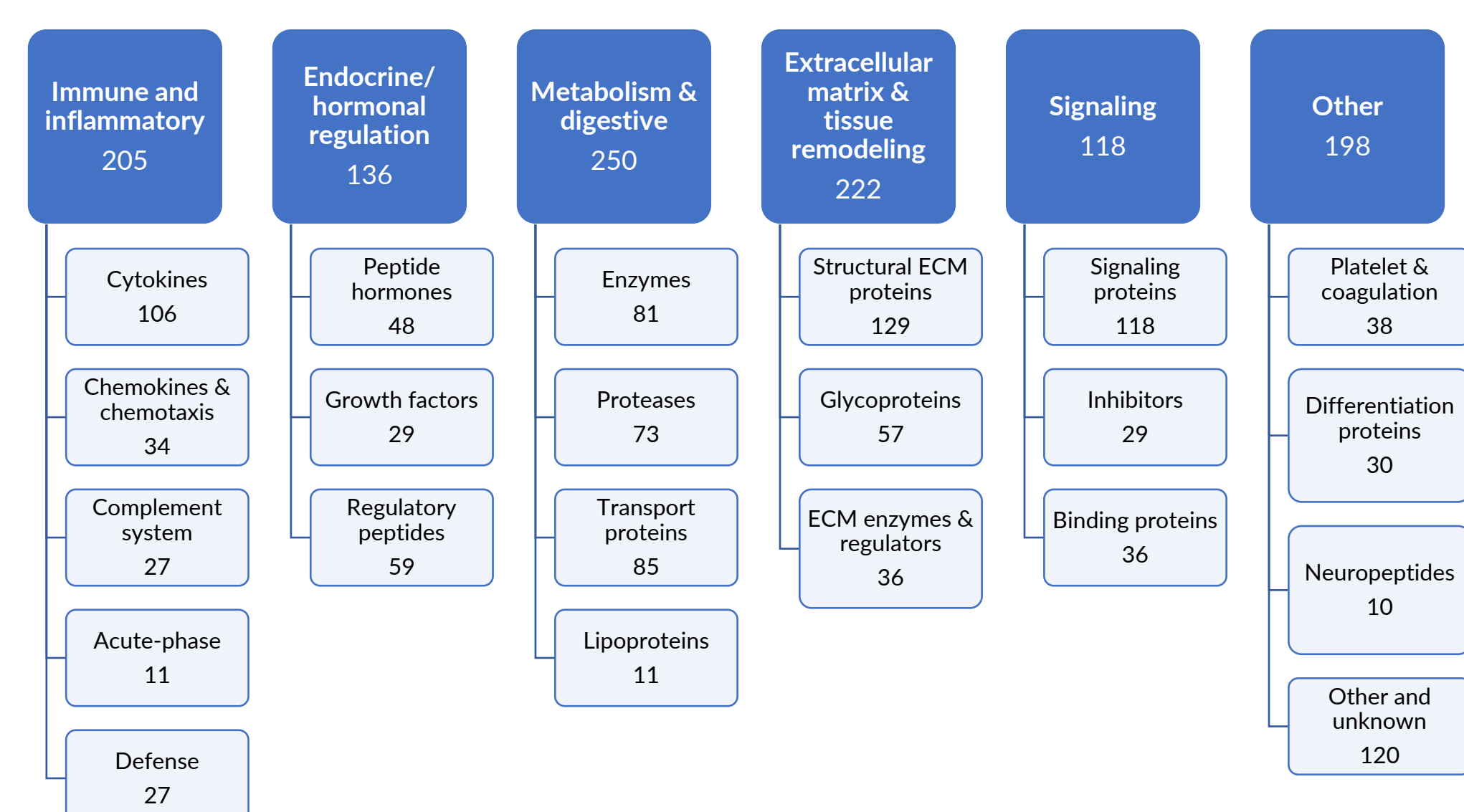
Conventional specificity tools such as tissue cross-reactivity (TCR) studies can not reliably detect secreted proteins



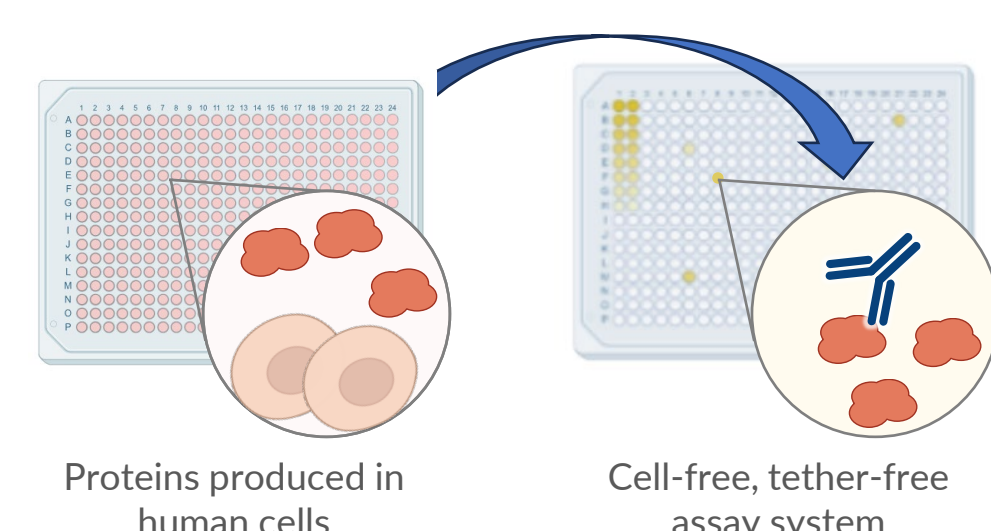
Goal: Develop a secreted proteome array to enable evaluation of specificity against the full extracellular proteome

Developing the Secreted Proteome Library (SPL)

1. Library of ~1,200 Secreted Protein Targets

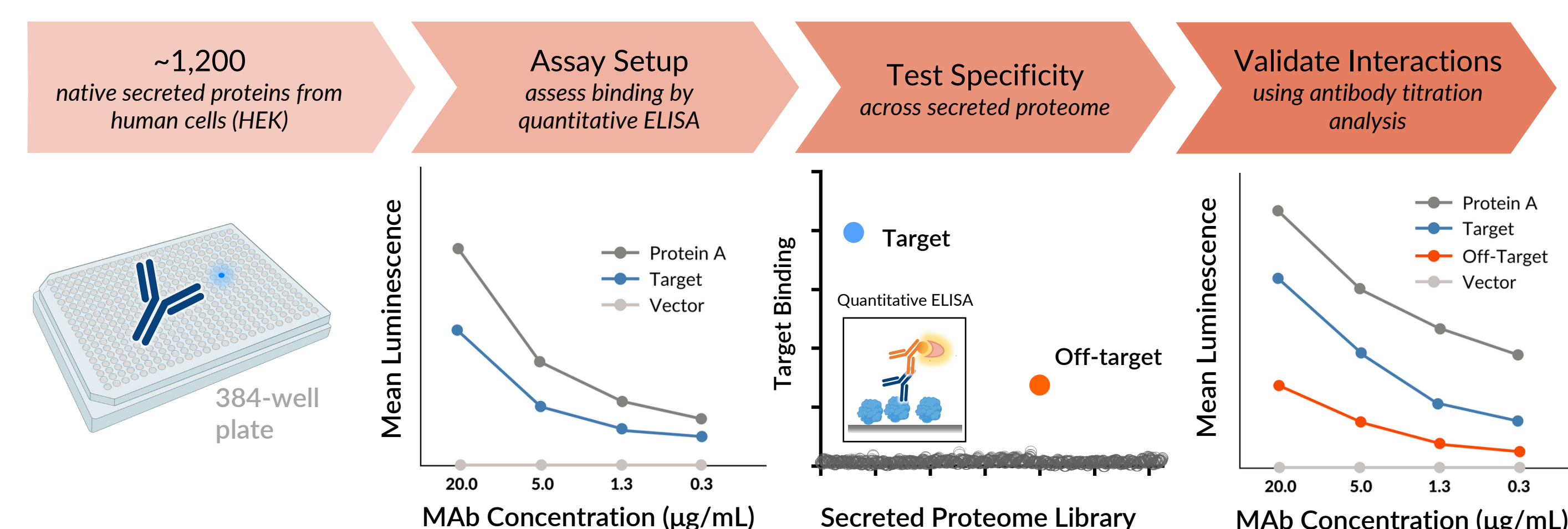


- All plasmids sequence confirmed
- Targets cloned with V5 tag to confirm expression
- Tether-free to ensure native, soluble conformation
- Produced from human cell line



Protein targets are produced directly from human HEK cells, ensuring native human conformations and appropriate post-translational modifications

2. High-Throughput ELISA-Based Platform for Quantitative SPL Screening

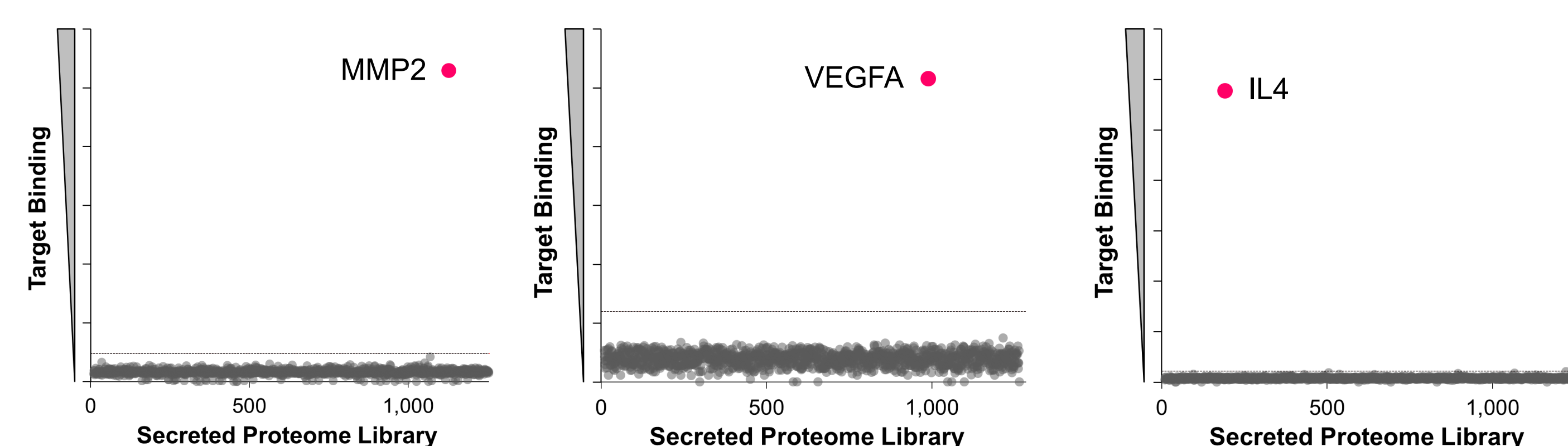


- Screen is performed in a cell- and tether-free system under unfixed conditions
- Identified targets are validated using titration experiments to confirm reactivity

ELISA-based platform enables binding assessment against native conformation secreted targets

Testing the Specificity of MAbs Against Secreted Targets

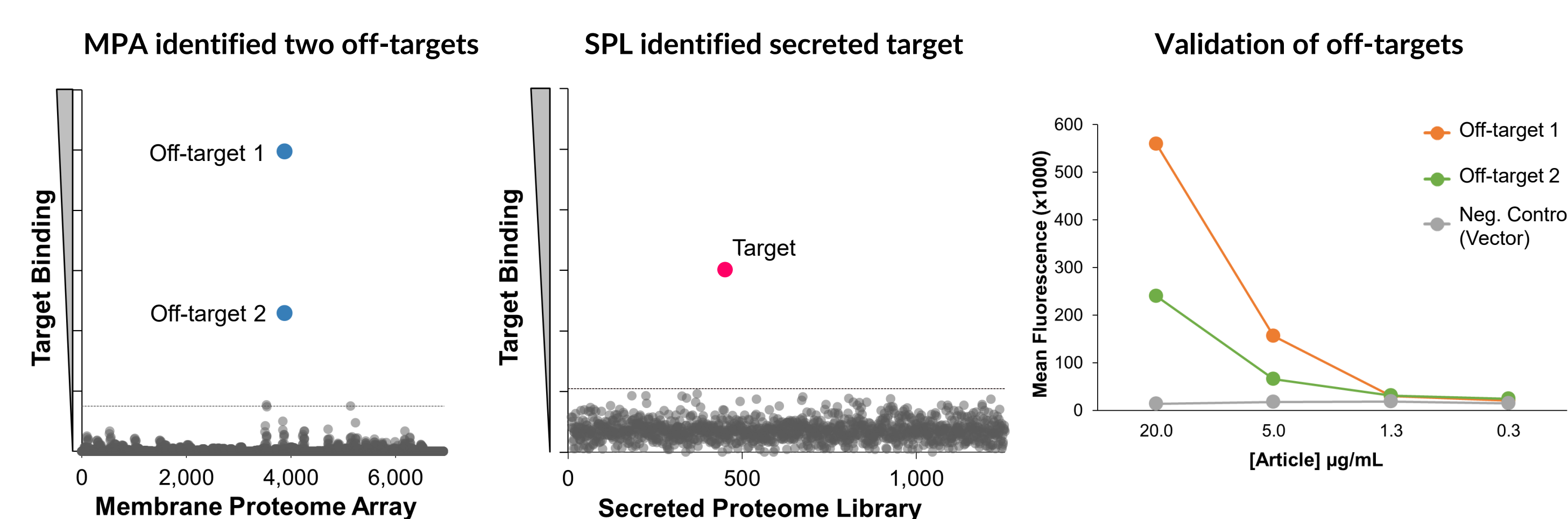
SPL correctly identifies a variety of protein targets



Compatible with all modalities: IgG, scFv-Fc, VHH-Fc, Biotinylated MAbs, etc.

Case Study: Comprehensive Screening Identified Off-Targets for an FDA-Approved Antibody Therapeutic

MPA+SPL identified off-targets for antibody targeting secreted protein



- An FDA-approved MAb targeting a secreted protein was tested on the MPA and SPL
- On-target binding was confirmed on the SPL, and two off-target membrane proteins were identified on the MPA. Results were compared to tissue cross-reactivity (TCR) data obtained from its BLA application
- The TCR study showed no staining in tissues, which is expected for antibodies that target a secreted antigen, and concluded no off-target binding

MPA+SPL identified off-targets missed by tissue staining

MPA in Final Review as an FDA-Qualified Drug Development Tool

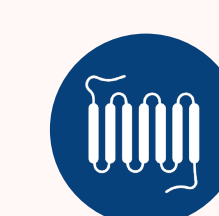
- FDA guidance recommends the use of advanced, human-relevant, in vitro assays (NAMs) to assess antibody specificity and drug safety
- MPA's ongoing process enhancements incorporate direct feedback from the FDA through its **ISTAND** program



Why Choose the MPA & SPL for Specificity Testing



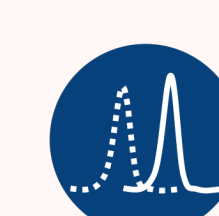
TRUSTED – Successfully screened 2,000+ MAbs using **ISO 9001** certified quality processes; trusted by **hundreds of customers**



BIOLOGICALLY RELEVANT – The only screening platform that assesses its entire library under **native conditions**



ACCEPTED – Data accepted by FDA, EMA, NMPA; 100+ IND submissions filed with MPA data



QUANTITATIVE – Flow cytometry & ELISA provide sensitive and quantitative measurements

