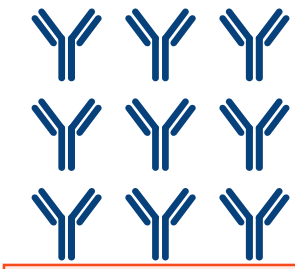
integral molecular

Antibody Specificity Profiling

using the Membrane Proteome Array™

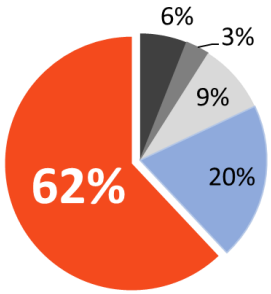
OFF-TARGET BINDING

Off-target antibody binding is common and can cause serious adverse events



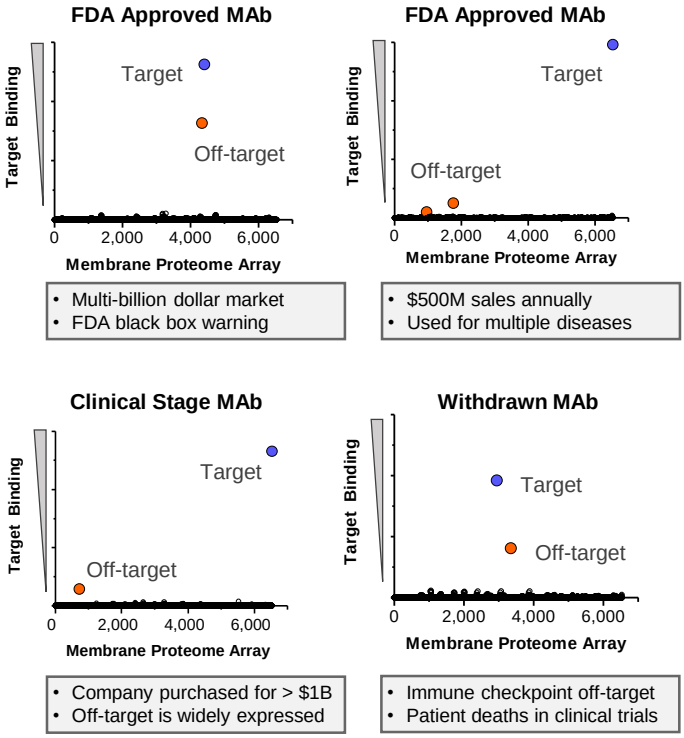
62% of Preclinical Failures are due to Off-target Safety

25% of MAbs are polyspecific



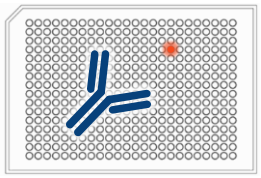
Off-target binding is the leading cause of preclinical drug failures and can cause serious side effects including death.

Many MAbs have off-target binding

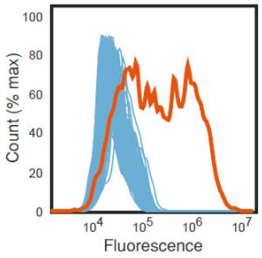


THE MEMBRANE PROTEOME ARRAY

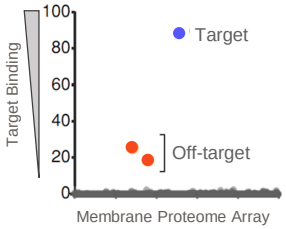
De-risk preclinical development by identifying your antibody's target and off-target interactions on the Membrane Proteome Array (MPA).



6,000
Native human membrane proteins



Measure binding
In unfixed cells by flow cytometry



Specificity profile
across membrane proteome

OPTIMIZED FOR RAPID 4-WEEK TURNAROUND

What proteins are in the MPA?

The MPA is the largest library of its kind and contains 94% of the human membrane proteome. All protein classes are represented, including nearly all GPCRs, ion channels, transporters, single-pass, multi-pass, and GPI-anchored proteins.

Why is the MPA so successful?

- Largest human membrane protein library
- Physiologically relevant screening conditions using unfixed cells
- High-sensitivity flow cytometry
- Optimized and expression-validated targets

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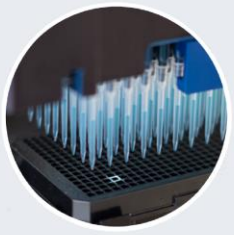
Integral Molecular's Membrane Protein Solutions

Integral Molecular offers innovative solutions for antibody discovery against challenging membrane protein targets, including GPCRs, ion channels, transporters, viral envelopes and immuno-oncology targets. With 15+ years experience working with the most complex proteins, Integral Molecular enables the isolation, characterization and engineering of monoclonal antibodies against otherwise intractable targets.

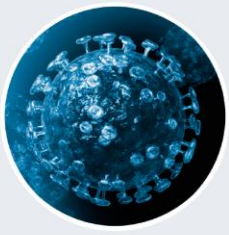
MPS Antibody Discovery

Lipoparticles

Epitope Mapping



Membrane Proteome Array



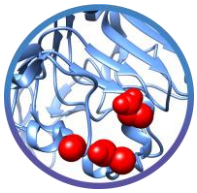
Vaccine Development

MPS Antibody Discovery

We harness proprietary technologies, including Lipoparticles, DNA immunization, and B-cell cloning, and use divergent species to overcome the challenges of working with membrane proteins and deliver lead MAbs

- >95% success in isolating MAbs against GPCRs, ion channels, transporters, and I-O targets
- Hundreds of diverse and functional (antagonist/agonist) MAbs

Shotgun Mutagenesis Epitope Mapping



Detailed epitope mapping using comprehensive alanine scanning across the native protein informs antibody mechanism of action and strengthens intellectual property

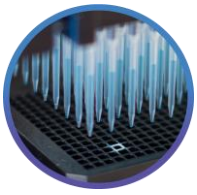
- >95% success rate for delivering high-resolution conformational epitopes
- 1,000+ epitopes mapped on secreted, cytoplasmic, and membrane protein targets

Lipoparticles

Lipoparticles are virus-like particles that concentrate membrane proteins in their native conformation for better immunization, phage panning, and screening

- 10-100x concentrated membrane proteins (50-200 pmol/mg)
- Conformationally correct

Membrane Proteome Array



The Membrane Proteome Array is used to profile MAb specificity and evaluate off-target safety by utilizing 6,000 human membrane proteins expressed in live cells

- Expression in live human cells and screening in unfixed cell-based assays
- 4-week turn-around, including validation by flow cytometry

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