



Case Study:

Highly specific MAbs against the tight junction protein Claudin 6 for solid tumors

THE NEED

Claudin 6 (CLDN6) is a valuable oncology target expressed in ovarian cancer, gastric cancer and other solid tumors, but is absent in normal adult tissues. This tetraspanin membrane protein has been difficult to target using antibodies since it is structurally complex, highly conserved (95% conservation with its murine ortholog) and homologous to Claudin 9 (CLDN9), differing by only 3 extracellular amino acids. CLDN6 also shares homology with 22 additional claudin family members, most of which are widely expressed in normal adult tissues.

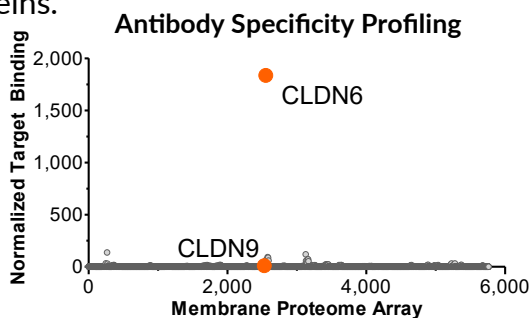
THE SOLUTION

MPS Antibody Discovery

The MPS platform was used to isolate highly specific monoclonal antibodies (MAbs) targeting CLDN6. An evolutionarily divergent host species (chicken) was immunized using proprietary DNA and Lipoparticle technologies to generate a robust immune response. A diverse panel of 788 CLDN6-selective antibodies was isolated representing 68 sequence families.

Membrane Proteome Array

Specificity profiling against > 5,300 membrane proteins demonstrated that lead CLDN6 MAbs have exquisite specificity for their target and lack reactivity against CLDN9 and other proteins.

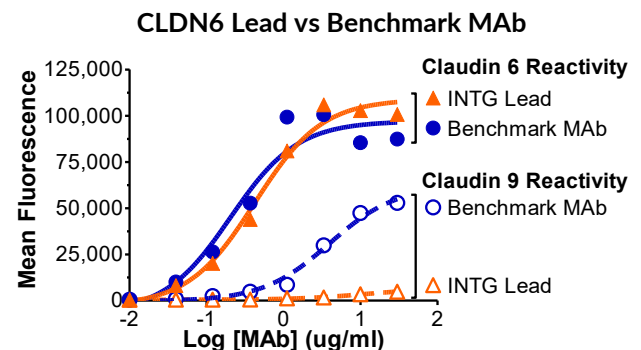


THE IMPACT

CLND6-Specific Preclinical MAb

A lead CLDN6 MAb candidate is being developed for use in various formats, including bispecifics, antibody-drug conjugates, and CAR-T therapeutics.

This MAb was characterized as being the best-in-class for specificity, demonstrating 100× higher specificity for CLDN6 than a benchmark MAb currently in Phase 1/2 clinical trials. Our CLDN6 lead MAb binds endogenous CLND6 expressed in the PA-1 ovarian carcinoma cell line. It can kill cells when formatted as a bispecific and activate T cells when formatted as a chimeric antigen receptor (CAR).



Contact us to discuss MPS Antibody Discovery partnerships

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