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(54) Title: HUMAN ANTIBODIES THAT BIND MESOTHELIN, AND USES THEREOF

(57) Abstract: The present disclosure provides isolated monoclonal antibodies that specifically bind to mesothelin with high affinity, particularly human monoclonal antibodies. Preferably, the antibodies bind human mesothelin. In certain embodiments, the antibodies are capable of internalizing into mesothelin-expressing cells or are capable of mediating antigen dependent cellular cytotoxicity. The invention further provides anti-mesothelin antibodies that can inhibit the binding of mesothelin to the ovarian cancer antigen CA125. Nucleic acid molecules encoding the antibodies of this disclosure, expression vectors, host cells and methods for expressing the antibodies of this disclosure are also provided. Antibody-partner molecule conjugates, bispecific molecules and pharmaceutical compositions comprising the antibodies of this disclosure are also provided. This disclosure also provides methods for detecting mesothelin, as well as methods for treating cancers, such as mesotheliomas, pancreatic cancers and ovarian cancers, using an anti- mesothelin antibody of this disclosure.