

# Minimally Immunogenic Germline Sequence Variants of COL-1 Antibody and Their Use

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## Technology description

### Summary

This invention relates to humanized monoclonal antibodies that bind to the tumor antigen carcinoembryonic antigen (CEA). More specifically, the present technology relates to humanized COL-1 antibodies that have minimal immunogenicity and retain antigen-binding affinity for CEA. CEA is over expressed in 95% of gastrointestinal and pancreatic tumors. Because CEA is over expressed consistently, it is anticipated that CEA would be an excellent target for an antibody-based therapeutics. The invention also discloses a novel method for humanizing monoclonal antibodies. This humanization method encompasses grafting xenogenic Specificity Determining Regions (SDRs) onto Complementarity Determining Regions (CDR) templates derived from several different human germline sequences. The use of several different human germline sequences greatly reduces the potential for immunogenicity and greatly minimizes the number of SDRs required for equivalent or better antigen binding of the antibody.

### Application area

This humanization method is applicable to development of antibodies to any immunogenic epitopes.

### Institution

[NIH - National Institutes of Health](#)

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