Nonclinical evaluation of a non-depleting, first-in-class humanized IgG4 agonist anti-ICOS antibody

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Introduction

ICOS (inducible costimulator) is a membrane-bound Ig superfamily member expressed on T cells and other immune cells. It plays a role in T cell activation and proliferation by interacting with its ligand, ICOS ligand (ICOSL), which is expressed on antigen-presenting cells (APCs) and other cells. The ICOS-ICOSL interaction is critical for the development and maintenance of T cell immunity, and agonistic anti-ICOS antibodies have shown promising preclinical activity in various cancer models.

Methods

In vivo studies were performed in immunocompromised mice, using human PBMCs or cancer cell lines transplanted into NSG mice. The efficacy of the anti-ICOS antibody was assessed by monitoring tumor growth, immune cell infiltration, and cytokine production. In vitro studies included binding assays and functional assays to evaluate the antibody's specificity and activity.

Results

The anti-ICOS antibody showed robust tumor regression in vivo, with significant immune cell infiltration and cytokine induction. The antibody was specific and potent, with minimal toxicity observed in healthy donors.

Discussion

The results indicate that the anti-ICOS antibody is a promising candidate for clinical development, offering a non-depleting, first-in-class approach to targeting ICOS. Further studies are needed to validate these preclinical findings in clinical trials.

References


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