Cleveland Clinic Innovations

Ovarian Cancer Antibody Therapeutic

Vincent Tuohy, PhD – Cleveland Clinic Lerner Research Institute

PRODUCT

Monoclonal antibody targeting human AMHR2-ED.

INDICATION

Epithelial ovarian carcinoma.

VALUE PROPOSITION

- High affinity; Humanized.
- AMHR2 target present in vast majority of ovarian cancers.
- Can be used as a naked antibody or in an antibody-drug conjugate.

DEVELOPMENT STAGE

In vivo preclinical proof of concept established; Humanized antibody.

INTELLECTUAL PROPERTY

PCT/US2021/015910
nationalized in US, EP, AU, JP, CA and CN.

RELATED PUBLICATIONS

Mazumder, Suparna et al. Oncotarget vol. 11,20 1894-1910. 19 May. 2020. PMID: 32499873.

Mazumder S, et al. Cancer Prev Res (Phila). 2017 Nov;10(11):612-624. PMID: 29093011.

CONTACT INFORMATION

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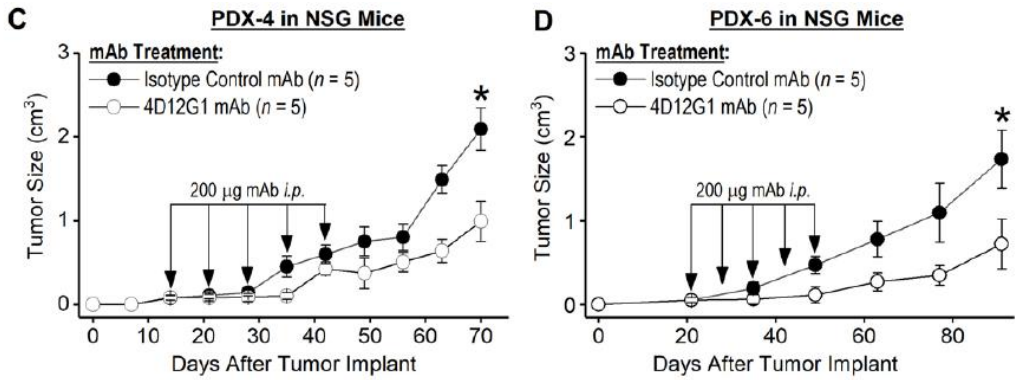
UNMET NEED

The anti-Mullerian hormone receptor II (AMHR2) is expressed in most epithelial ovarian carcinoma (EOC). Occurring primarily in post-menopausal women, EOC is typically diagnosed at late stages resulting in a high recurrence rate and low five-year overall survival rate (47%). AMHR2 is normally expressed in ovarian tissue but turned off in post-menopausal ovaries. American Cancer Society estimates >19K new cases and >13K deaths in 2023. There is a significant need for more effective ways to control this disease.

SOLUTION

CCF has developed a monoclonal antibody against AMHR2. Vaccination against AMHR2-ED demonstrated inhibition of the growth of murine EOCs through CD4+ T- cells that facilitate B-cells to produce AMHR2-ED-specific IgG. A panel for AMHR2-ED was developed to find an antibody that would mimic the clinical effectiveness of the polyclonal IgG response resulting from AMHR2-ED vaccination. Treatment with the humanized AMHR2-ED antibody demonstrated apoptosis in EOCs.



Reduction in tumor growth in ovarian PDX models following treatment with AMHR2-ED mAb