



THERAPEUTIC FOR OVARIAN CANCER

NKG2D-Targeted Therapy for Ovarian Cancer

Brief Description of Technology

Therapeutic for ovarian cancer that targets NKG2D ligands to prevent binding and stimulation of the NKG2D receptor.

BUSINESS OPPORTUNITY

Exclusive license
Sponsored research

TECHNOLOGY TYPE

Therapeutic
Biologic
Protein
Oncology

STAGE OF DEVELOPMENT

Preclinical *in vivo*
Preclinical *in vitro*

PATENT INFORMATION

Method: US 2014037266
Heptamer: Patent pending

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Technology Overview

Normally expressed by immune cells, subsets of human cancer cells co-opt expression of the NKG2D receptor to exploit the presence of its ligands on cancer cells for oncogenic/tumorigenic stimulation. One such cancer subtype is ovarian cancer [OC]. Dr. Thomas Spies has demonstrated the ability to interfere with cancer growth by interfering with NKG2D ligand binding, while Dr. Roland Strong and Dr. Martin Prlic have developed a NKG2D heptamer that targets and binds all known human NKG2D ligands and prevents the ligands from binding and stimulating the NKG2D receptor. The NKG2D heptamer significantly reduces NKG2D+ cancer cells *in vitro* and *in vivo*. OC is currently treated with toxic chemotherapy drugs [e.g., carboplatin and paclitaxel], which lose efficacy due to drug resistance.

Applications

- Therapeutic for cancer subtypes
- Ovarian cancer

Advantages

- Alternative to toxic chemotherapy with higher efficacy
- Pan-NKG2D ligand masking through multiple ligand binding positions allows for lower dose with single therapeutic, in contrast with antibody-based therapeutics

Market Overview

Ovarian cancer [OC] is the fourth most common cancer among women with approximately 22,280 new cases diagnosed in the US in 2016 and costs the healthcare system \$5.12 billion annually. The market for OC drugs is predicted to triple from \$460 million [2011] to \$1.4-\$1.71 billion [2021].

Investigator Overview

Thomas Spies, PhD, Clinical Research Division