



DBPR376- A Novel Luteinizing Hormone-Releasing Hormone Receptor (LHRHR)-Targeting Small Molecule Mertansine Conjugate for Cancer Treatment

INDICATIONS:

- ✓ Cancers with expression of Luteinizing Hormone-Releasing Hormone Receptor (LHRHR)

PATENTS:

US patent filed

DEVELOPMENT STATUS:

Preclinical

CONTACT:

Pey-Yea Yang
Manager,
Institute of Biotechnology
and Pharmaceutical
Research, National Health
Research Institutes
No. 35, Keyan Rd.
Miaoli County 35053
Taiwan, R.O.C.
Tel: 886-37-206-166
ext. 35705
peyyea@nhri.edu.tw

INVENTION DESCRIPTION

Ligand-targeted drug conjugates offer enormous potentials to enhance the precision and efficacy of anticancer therapies. Current drug conjugates are designed to target disease-associated antigens or receptors for delivery of toxic agents to tumor sites. Luteinizing hormone-releasing hormone receptor (LHRHR), not readily detectable in normal visceral organs, were found to be overexpressed in the plasma membrane of several types of cancers ranging from 86% of prostate cancer, 80% of human endometrial and ovarian cancers, 80% of renal cancer, 50% of breast cancers, and 32–50% of pancreatic cancers.

We have employed novel and modified LHRH peptide antagonist as a targeting ligand and combined with patented linker-mertansine for selective drug-delivery to the tumor site through selectively binding to LHRHR with high affinity, and showed potent anticancer efficacies in many different cancer models.

COMPETITIVE ADVANTAGES

- Our SMDC presents a pharmacokinetically optimizable, cost-effective, single-component, and chemically defined SMDC for effective treatment of LHRHR-expressing cancers.
- It demonstrates potent efficacy (remission) against triple negative breast cancer (TNBC) and ovarian cancer.
- Tumor-associated LHRHR can serve as biomarkers for selection of patients.

MARKET POSITIONING/OPPORTUNITY

This is a first-in-class and novel design of drug delivery system capable of being developed into theranostics with precision medicine application potential for cancer therapies.

March 19, 2024