An Antibody-drug Conjugate Targeting EGFR for Cancer Therapy

Overview

Drug Name	EGFR-ADC
Description	EGFR-ADC is an antibody-drug conjugate consisting of fully human IgG1 monoclonal antibody targeting epidermal growth factor receptor (EGFR) conjugated to monomethyl auristatin E (MMAE). The product is in early clinical development for the treatment of solid tumors.
Target	EGFR; Tubulin
Drug Modality	Antibody-Drug Conjugates
Indication	Solid Tumor
Product Category	Antimitotic Drugs
Mechanism of Action	Microtubule Destabilizers
Status	Phase I
Patent	Granted

Seeking Global Cooperation

Protheragen Inc. is actively seeking partnership for EGFR-ADC. Potential collaboration can be strategic alliance, licensing, or marketing agreement.
We look forward to hearing from you.

Target

Epidermal Growth Factor Receptor (EGFR)

The epidermal growth factor receptor (EGFR), a commonly expressed transmembrane glycoprotein of the growth factor receptor tyrosine kinase family, was one of the first receptors found to be encoded by proto-

oncogenes. It is expressed in many normal human tissues and activation of the proto-oncogene results in elevated expression of the receptor in many types of human tumors. The extracellular domain of the EGFR binds several ligands, including EGF and transforming growth factor alpha (TGF-alpha). Ligand binding activates the tyrosine kinase activity of the intracellular domain of the EGFR, triggering mechanisms leading to cell division and proliferation, tumor cell dissemination, and escape from apoptosis. In general, tumor cells require smaller amounts of exogenously supplied growth factors to proliferate than normal cells. This may, in part, be due to their ability to respond to endogenously produced growth factors, such as TGF-alpha. In addition, overexpression of growth factor receptors, such as EGFR, is seen in a variety of tumors and allows the tumor to respond to low concentrations of growth factors. EGFR and its ligands are overexpressed in a number of solid tumors including lung cancer. The relationship between EGFR and clinically aggressive malignant disease makes this receptor a promising target for lung cancer therapy.

Tubulin

This protein may form heterodimers with alpha-tubulins, constituting the main structural subunit of microtubules.

Indication

Solid Tumor

Solid tumors are abnormal mass of tissue that usually does not contain cysts or liquid areas. Solid tumors may be benign or malignant. Different types of solid tumors are named for the type of cells that form them, such as breast cancer. Based on projections, cancer deaths will continue to rise with an estimated 11.4 million people dying from cancer in 2030.

The best strategy for fighting cancer is prevention to reduce cancer risk. Nevertheless, even if we were to apply all that we know about preventing cancer, one out of four cancers would still occur. Because of this, therapies that target malignancies after they have developed will continue to be important for some time to come. The

most commonly used treatment modalities of cancer include some combination of surgery, radiation therapy, and chemotherapy. The best approach to treating cancer provides a balance between therapeutic effectiveness and minimization of treatment-associated side effects.

The global market for solid tumor treatment was estimated at $121.3 billion in 2018 and is expected to reach $424.6 billion by 2027, expanding at a CAGR of 15% from 2019 to 2027.

Mechanism of Action

Microtubule Destabilizers

Molecular Mechanism	Inhibiting the tubulin polymerization in the tumor cells expressing EGFR

Status

The Status of EGFR-ADC

The international patent applications under the PCT have been granted.

	Discovery/Optimization	Preclinical	Clinical
EGFR-ADC			

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