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Development of EGFR specific BiTE (bispecific T cell engager) for solid tumor treatment

SNU R&DB Foundation

ONCOLOGY | **Hit**

Product Type	Antibody
Indication	Cancers with EGFR overexpression (such as colorectal cancer, non-small cell lung cancer, head and neck cancer, glioblastoma, and breast cancer)
Target	EGFR
MoA(Mechanism of Action)	• A bispecific T cell engager (BiTE) designed to target EGFR functions by simultaneously binding to EGFR on tumor cells and CD3 on T cells. This dual engagement brings T cells into close proximity with the tumor, leading to MHC-independent T cell activation. Activated T cells then release cytotoxic granules such as perforin and granzymes, inducing targeted tumor cell lysis. This mechanism enables serial killing of EGFR-positive tumor cells regardless of TCR specificity.
Competitiveness	• Depatuxizumab, an antibody targeting EGFR, is currently being investigated in the form of a chimeric antigen receptor (CAR) T cell therapy, which is undergoing a Phase 1 clinical trial at City of Hope. • Depatuxizumab binds to domain II of EGFR, whereas the antibody under development by our research group binds to domain IV. • In BiTE development, antibodies that target membrane-proximal epitopes on tumor cells are generally advantageous; therefore, our antibody is expected to exhibit superior efficacy compared to depatuxizumab.
Development Stage	Hit
Route of Administration	Intravenous (IV) injection or subcutaneous (SC) injection