Engineered Toxin Body Targeting HER2 MT-5111

National Cancer Institute

Source

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An engineered toxin body (ETB) composed of a single chain variable fragment (scFv) from an antibody targeting the human epidermal growth factor receptor 2 (HER2; HER-2), fused to the enzymatically active de-immunized, ribosome-inactivating cytotoxic payload Shiga-like toxin-A subunit (SLTA), with potential antineoplastic activity. Upon administration, the scFv moiety of MT-5111 specifically targets and binds to a distinct epitope on HER2-expressing cells. Upon internalization, the SLTA moiety is released and acts as an N-glycosidase, which binds to and cleaves an adenine nucleobase in the 28S RNA component of the 60S subunit of ribosomes and prevents ribosome activity. This inhibits protein synthesis and leads to apoptosis in HER2-expressing tumor cells. HER2, a tumor-associated antigen (TAA), is overexpressed in a variety of tumor cell types.