

[Open Peer Review on Qeios](#)

Anti-EGFRvIII Immunotoxin MR1-1

National Cancer Institute

Source

National Cancer Institute. *Anti-EGFRvIII Immunotoxin MR1-1*. NCI Thesaurus. Code C88307.

A recombinant immunotoxin consisting of single-chain variable domain fragment antibody directed against the tumor-specific antigen EGFRvIII (MR1scFv) fused to domains II and III of the *Pseudomonas* exotoxin (PE38KDEL), with potential antineoplastic activity. Upon administration, the antibody moiety of anti-EGFRvIII immunotoxin MR1-1 binds to EGFRvIII; upon internalization, the exotoxin portion inhibits protein synthesis, resulting in a reduction in tumor cell proliferation of EGFRvIII-expressing tumor cells. EGFRvIII, a type III in-frame deletion mutation of the epidermal growth factor receptor (EGFR) gene, is expressed by a variety of cancers, including glioblastoma multiforme, non-small lung carcinoma, and breast carcinoma. Compared to intact IgG antibodies, single-chain antibodies such as MR1scFv are smaller and may penetrate tumors better. *Pseudomonas* exotoxin PE38KDEL was modified to remove the natural cell binding domain.