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Copper Cu 64-DOTA-Anti-HER3 Monoclonal Antibody U3-1287

National Cancer Institute

Source

National Cancer Institute. *Copper Cu 64-DOTA-Anti-HER3 Monoclonal Antibody U3-1287*. NCI Thesaurus. Code C99217.

A radioimmunoconjugate of the fully human monoclonal antibody against the third member of the epidermal growth factor receptor (EGFR), HER3 or ERBB3, conjugated with the bifunctional, macrocyclic chelating agent tetra-azacyclododecanetetra-acetic acid (DOTA) and labeled with radioisotope copper Cu 64, with potential diagnostic properties upon positron emission tomography (PET) imaging and antineoplastic activity. The antibody moiety of copper Cu 64-DOTA-anti-HER3 monoclonal antibody U3-1287 binds to and blocks the activation of HER3, thereby resulting in the inhibition of EGFR-dependent PI3K/AKT signaling and the subsequent inhibition of cellular proliferation and differentiation. The Cu 64 moiety may be detected using positron emission tomography (PET), thereby allowing the imaging and quantification of HER3-expressing tumor cells. HER3, which lacks the kinase domain conveying ligand-binding signaling by forming heterodimers with other EGFR members that have kinase activity, is frequently overexpressed in solid tumors.