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Zirconium Zr 89-labeled RO5479599

National Cancer Institute

Source

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A radioimmunoconjugate containing a glycoengineered, humanized monoclonal antibody directed against the human epidermal growth factor receptor HER3 (ErbB3) and labeled with the radioisotope zirconium Zr 89, with radioisotopic activity and potential use as an imaging agent as well as potential antineoplastic activity. Upon administration, the RO5479599 moiety of zirconium Zn 89-labeled RO5479599 binds to the extracellular domain of HER3 and inhibits HER3 dimerization, thereby preventing EGFR-dependent signaling. In addition, RO5479599 elicits enhanced antibody-dependent cellular cytotoxicity (ADCC). Upon binding, the radioisotope moiety may be detected using positron emission tomography (PET), thereby allowing the imaging and quantification of HER3-expressing tumor cells. HER3, a member of the epidermal growth factor receptor (EGFR) family of receptor tyrosine kinases, is frequently overexpressed in tumors; it has no active kinase domain but is activated through heterodimerization with other members of the EGFR receptor family, such as HER2.