Lutetium Lu 177 Dotatate

National Cancer Institute

Source

National Cancer Institute. Lutetium Lu 177 Dotatate. NCI Thesaurus. Code C95020.

A radioconjugate consisting of the tyrosine-containing somatostatin analog Tyr3-octreotate (TATE) conjugated with the bifunctional, macrocyclic chelating agent tetra-azacyclododecanetetra-acetic acid (DOTA) and radiolabeled with the beta-emitting radioisotope lutetium Lu 177, with potential imaging and antineoplastic activities. Lutetium Lu 177 dotatate binds to somatostatin receptors (SSTRs), with high affinity to type 2 SSTR, present on the cell membranes of many types of neuroendocrine tumor (NET) cells. Upon binding and internalization, this radioconjugate specifically delivers a cytotoxic dose of beta radiation to SSTR-positive cells. Tyr3-octreotate (TATE) is an octreotide derivative in which phenylalanine at position 3 is substituted by tyrosine and position 8 threoninol is replaced with threonine. SSTRs have been shown to be present in large numbers on NET and their metastases, while most other normal tissues express low levels of SSTRs.