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# Copper Cu-64-DOTA-alendronate

National Cancer Institute

## Source

National Cancer Institute. *Copper Cu-64-DOTA-alendronate*. NCI Thesaurus. Code C150429.

A radioconjugate containing the biphosphonate alendronate conjugated with the bifunctional, macrocyclic chelating agent 1,4,7,10-tetra-azacyclododecane-1,4,7,10-tetra-acetic acid (DOTA) and labeled with the radioisotope copper Cu 64, with potential use as an imaging agent for microcalcifications in mammary tumors using positron emission tomography (PET). Upon administration of the copper Cu-64 alendronate, the alendronate moiety targets and binds to hydroxyapatite crystals found in malignant tumors. Upon binding and PET imaging, the radioisotope moiety is detected, thereby allowing differentiation between malignant tumors, benign tumors and normal tissue, as the highest uptake of  $^{64}\text{Cu}$ -DOTA-alendronate occurs in malignant tumors while the lowest uptake occurs in benign tumors and normal mammary tissue.