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Fluorine F 18 L-glutamate Derivative BAY94-9392

National Cancer Institute

Source

National Cancer Institute. *Fluorine F 18 L-glutamate Derivative BAY94-9392*. NCI Thesaurus. Code C116735.

A radioconjugate composed of the radionuclide fluorine F 18 conjugated to the L-glutamate derivative, (S)-4-(3-fluoropropyl)-L-glutamic acid (FSPG), targeting the cystine/glutamate transporter protein (xCT or SLC7A11), which is a subunit of the transport system xc(-), with potential imaging activity upon positron emission tomography (PET). Upon intravenous administration, the FSPG moiety of BAY94-9392 specifically binds to xCT and BAY94-9392 is subsequently taken up by the cell via xc(-). Upon uptake, xc(-) activity can be assessed and tumor cells can be detected and imaged by PET. System xc(-), a sodium-independent, heterodimeric transporter, mediates the cellular uptake of cystine in exchange for intracellular glutamate at the plasma membrane; although, it will take up glutamate as well. Xc(-) shows increased activity in certain tumor cells compared to normal, healthy cells due to increased metabolic activity in tumor cells; it plays a key role in tumor cell proliferation, progression and chemoresistance as well as in the management of oxidative stress.