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Carbon C 11 N-desmethyl-Loperamide

National Cancer Institute

Source

National Cancer Institute. *Carbon C 11 N-desmethyl-Loperamide*. NCI Thesaurus. Code C95725.

A radiopharmaceutical containing N-desmethyl loperamide (dLop) labeled with carbon 11 (¹¹C), used to measure the activity of efflux transporter P-glycoprotein (P-gp) in positron emission tomography (PET). Upon administration, carbon C 11 N-desmethyl-loperamide acts as a substrate for the efflux transporter P-gp. Upon uptake by P-gp at the blood-brain barrier (BBB) and subsequent PET imaging, this radioligand may allow for prediction of P-gp function and expression in brain tumor patients. As P-gp activity may influence response to therapy, measuring P-gp activity may be beneficial when choosing chemotherapy. P-gp, encoded by the MDR-1 gene and a member of the ATP-binding cassette (ABC) superfamily of transmembrane transporters, is overexpressed by some MDR tumors and may contribute to multidrug resistance to chemotherapy.