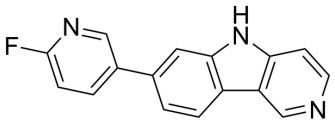
T807

Cat. No.:	HY-101184
CAS No.:	1415379-56-4
Molecular Formula:	$C_{16}H_{10}FN_3$
Molecular Weight:	263.27
Target:	Tau Protein
Pathway:	Neuronal Signaling
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 2 years -20°C 1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 16.6 mg/mL (63.05 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Concentration / Solvent / Mass	1 mg	5 mg	10 mg
	1 mM	3.7984 mL	18.9919 mL	37.9838 mL
	5 mM	0.7597 mL	3.7984 mL	7.5968 mL
	10 mM	0.3798 mL	1.8992 mL	3.7984 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: 1.25 mg/mL (4.75 mM); Suspended solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 1.25 mg/mL (4.75 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

T807 a novel tau positron emission tomography (PET) tracer.

In Vitro

Aggregated tau protein is a major neuropathological substrate central to the pathophysiology of neurodegenerative diseases such as Alzheimer's disease (AD). In vitro autoradiography results show that [^{18}F]T807 exhibits strong binding to PHF-tau positive human brain sections (K_d=14.6 nM). A comparison of autoradiography and double immunohistochemical staining of PHF-tau and Ab on adjacent sections demonstrates that [^{18}F]T807 binding colocalizes with immunoreactive PHF-tau pathology, but does not highlight Ab plaques[1]. [^{18}F]T807 strongly binds to tau lesions primarily made of paired helical filaments in Alzheimer's brains e.g. intra and extraneuronal tangles and dystrophic neurites. [^{18}F]T807 off-target binding to neuromelanin- and melanin-containing cells and, to a lesser extent, to brain hemorrhagic lesions is identified[2].

	MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	[^{18}F]T807 is able to cross the blood–brain barrier and ished out quickly in mice model. [^{18}F]T807 clears rapidly from the brain, with activity values decreasing from 4.43% ID/g at 5 minutes to 0.62% ID/g at 30 minutes. Kidney elimination is a significant clearance pathway, resulting in a maximum tracer concentration of 14.99% ID/g in the kidneys at 5 minutes, which decreases to 5.52% ID/g at 30 minutes. The accumulation of activity in muscle and bone remain relatively low throughout the PET scan[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Kinase Assay [2]	10 mg/mL frozen brain homogenate aliquots are thawed and diluted 10-fold in binding buffer to 1 mg/mL. 500 µL of appropriate concentrations of non-radioactive T807 to be tested are combined with 400 µL of [^{3}H] T807 (29.7 Ci/mmol) in a volume of 900 µL of binding buffer. The assay begins by addition of 100 µL of the 1 mg/mL brain homogenate to achieve a final concentration of 0.10 mg tissue/mL for radioligands. The final concentration of [^{3}H] T807 is typically 1-2 nM. After incubation at room temperature for 60 minutes, the binding mixture is filtered and rapidly washed 5 times with 3 mL binding buffer. The filters are counted[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration [1]	Mice: Six male mice at each time point are administered 250 mCi [^{18}F]T807 (in 200 mL saline) via tail vein injection. At 5, 15, and 30 minutes after administration, the mice are anesthetized and 500-mL whole blood samples and centrifuged. After euthanasia, the liver, kidneys, skeletal muscle (right quadriceps), brain, and bone (femur) are harvested and weighed. Each of the tissue samples are transferred to gamma counter tubes and counted[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Elife. 2019 Mar 25;8:e45457.

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REFERENCES

[1]. Xia CF, et al. [(18)F]T807, a novel tau positron emission tomography imaging agent for Alzheimer's disease. Alzheimers Dement. 2013 Nov;9(6):666-76.

[2]. Marquié M, et al. Validating novel tau positron emission tomography tracer [F-18]-AV-1451 (T807) on postmortem brain tissue. Ann Neurol. 2015 Nov;78(5):787-800.

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