Product Data Sheet

Product Name: JP83
Cat. No.: GC12546

Chemical Properties

Cas. No.	887264-44-0		
Chemical Name	3'-carbamoyl-biphenyl-3-yl-hexylphenylcarbamate		
SMILES	O=C(NCCCCCCc1ccccc1)Oc1cccc(c1)c1cccc(c1)C(=O)N		
Formula	$C_{26}H_{28}N_2O_3$	M.Wt	416.5
Solubility	≤1mg/ml in ethanol;30mg/ml in DMSO;30mg/ml in dimethyl formamide	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure	JP83		

Background

IC50: 14 nM for the human recombinant enzyme

JP83 is an irreversible fatty acyl amide hydrolase (FAAH) inhibitor.

The enzyme fatty acyl amide hydrolase (FAAH) is capable of hydrolyzing anandamide and other esters and amides with long unsaturated acyl chains, which is widely expressed in brain and other tissues.

In vitro: JP83 was identified as an irreversible FAAH inhibitor of the carbamate class when it was tested using radiolabeled oleamide as the substrate. MS results indicated that it inhibited FAAH by carbamylation of the enzyme’s serine nucleophile. In addition, JP83 was found to be able to inhibit FAAH with equal or greater potency than URB597 [1].

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In vivo: Mice were treated with JP104, a close analog of JP83, after which they were sacrificed and their tissues removed for click chemistry analysis. It was found that at 1 mg/kg of JP104, FAAH labeling was ~80% of maximum in the brain, while none of the liver and kidney targets were modified to greater than 20%. Furthermore, the nearly complete inactivation of brain FAAH by JP104 at 1 mg/kg was confirmed by competitive ABPP studies with FP-Rh. In contrast, JP104 couldnot reduce the intensity of FP-Rh signals in liver and kidney proteomes significantly [1].

Clinical trial: So far, no clinical study has been conducted.

Reference:
[1] Alexander, J. P., and Cravatt, B.F. Mechanism of carbmate inactivation of FAAH: Implications for the design of covalent inhibitors and in vivo functional probes for enzymes. Chemistry & Biology 12, 1179-1187 (2005).

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