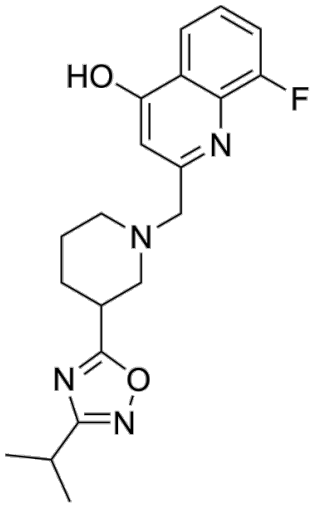
Product Data Sheet

Product Name: FTO-IN-17
Cat. No.: GC79675

Chemical Properties

Cas. No.	1434867-98-7		
Formula	$C_{20}H_{23}FN_4O_2$	M.Wt	370.42
Solubility		Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20°C 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



Background

FTO-IN-17 is an orally active and brain-penetrant FTO (m 6 A RNA demethylase) inhibitor with an IC_{50} of 1.1 μM. FTO-IN-17 stably binds the FTO catalytic pocket. FTO-IN-17 protects against Aβ1-42-induced toxicity while increasing global m 6 A levels and dampening pro-inflammatory gene (CXCL10, TNF-α) expression. FTO-IN-17 ameliorates anxiety-like behavior and rescues hippocampal-dependent spatial, recognition memory and neuroinflammation in Alzheimer's disease mice models [1].

In Vivo, FTO-IN-17 (3 mg/kg; I.g.,; daily; 28 days) ameliorates anxiety-like behavior and rescues

spatial and recognition memory deficits in Alzheimer's disease mice models, concomitant with increased brain m6A levels, normalized synaptic plasticity markers, and reduced neuroinflammation[1].

In Vitro, FTO-IN-17 (Compound VI) exhibits high in vitro blood-brain barrier permeability (Pe = 12.2 × 10-6 cm/s)[1]. FTO-IN-17 (0.01-50 μM; overnight) potently inhibits human FTO demethylase activity with an IC_{50} of 1.1 μM[1]. FTO-IN-17 (10 μM; overnight) is fully selective for human FTO over human ALKBH5 demethylase, showing no inhibition of ALKBH5 at 10 μM[1]. The (S)-stereoisomer of FTO-IN-17 exhibits significantly stronger, more stable binding to human FTO than the (R)-stereoisomer, with over 7 times higher calculated binding affinity[1]. FTO-IN-17 (0.001-50 μM; 30 min pre-incubation + 24 h co-incubation) provides sustained, dose-dependent neuroprotection against Aβ1-42-induced toxicity in differentiated SH-SY5Y cells, increases global m6A levels, and downregulates pro-inflammatory gene expression at 1 μM[1].

References:
[1]. Irisarri A, et al. Structure-based virtual screening, in vitro and in silico analysis identified novel potent m6A demethylase FTO inhibitors as promising neurotherapeutic agents. Eur J Med Chem. 2026;312:118852.