

Product Data Sheet

Product Name: FTO-IN-17

Cat. No.: GC79675

Chemical Properties

Cas. No. 1434867-98-7

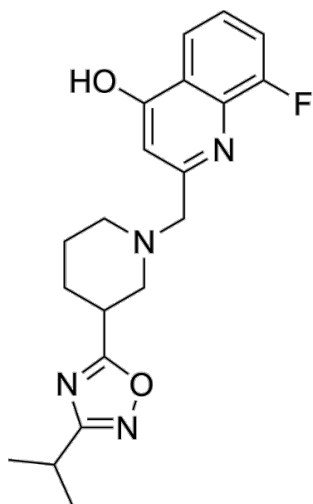
Formula $C_{20}H_{23}FN_4O_2$ M.Wt 370.42

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 (m⁶A RNA demethylase) inhibitor with an IC₅₀ 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 m⁶A 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

Caution: Product has not been fully validated for medical applications. For research use only.

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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 ($P_e = 12.2 \times 10^{-6}$ cm/s)^[1]. FTO-IN-17 (0.01-50 μ M; overnight) potently inhibits human FTO demethylase activity with an IC_{50} of 1.1 μ M^[1]. FTO-IN-17 (10 μ M; overnight) is fully selective for human FTO over human ALKBH5 demethylase, showing no inhibition of ALKBH5 at 10 μ M^[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 μ M; 30 min pre-incubation + 24 h co-incubation) provides sustained, dose-dependent neuroprotection against A β 1-42-induced toxicity in differentiated SH-SY5Y cells, increases global m6A levels, and downregulates pro-inflammatory gene expression at 1 μ M^[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.

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