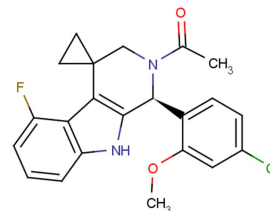


ONO-2952

Chemical Properties

CAS No.: 895169-20-7
Formula: C₂₂H₂₀ClFN₂O₂
Molecular Weight: 398.86
Appearance: N/A
Storage: 0-4°C for short term (days to weeks), or -20°C for long term (months).

**Biological Description**

Description	ONO-2952 is more selective for TSPO than other receptors, transporters, ion channels, and enzymes. ONO-2952 is a potent and selective translocator protein 18 kDa (TSPO) antagonist (K _i : 0.33-9.30 nM for rat and human TSPO). ONO-2952 has the potential for irritable bowel syndrome treatment. ONO-2952 exerts its anti-stress effects through inhibition of excessive activation of the noradrenergic system in the brain without the amnesic effect.
Targets(IC ₅₀)	Rat and human TSPO: (K _i) 0.33-9.30 nM
In vitro	ONO-2952 at a concentration of 10 μM displayed good selectivity for TSPO against 98 off-targets (<50% inhibition). ONO-2952 K _i value for the GABAA receptor is more than 600 times higher than that for TSPO. Determination of ONO-2952 K _i or IC ₅₀ values for the remaining 35 targets (50% inhibition at 10 μM) reveals K _i values of less than 1 μM only for 3 receptors, i.e. melatonin 2, progesterone B, and adrenergic α ₂ C. The affinity of ONO-2952 for these receptors is at least 59 times lower than that for TSPO [1].
In vivo	ONO-2952 inhibits both neurosteroid accumulation and noradrenaline release in the brain of rats exposed to acute stress. ONO-2952 also inhibits conditioned fear stress-induced freezing behavior in rats. ONO-2952 (0.03-3 mg/kg; p.o.; male Sprague Dawley rats) treatment dose-dependently inhibits restraint stress-induced defecation in rats with brain TSPO occupancy of more than 50% [1].

Solubility Information

Solubility	< 1 mg/ml refers to the product slightly soluble or insoluble
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.507 mL	12.536 mL	25.071 mL
5 mM	0.501 mL	2.507 mL	5.014 mL
10 mM	0.251 mL	1.254 mL	2.507 mL
50 mM	0.05 mL	0.251 mL	0.501 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. The storage conditions and period of the stock solution: - 80 °C for 6 months; - 20 °C for 1 month. Please use it as soon as possible.

Reference

1. Mitsui K, et al. Anti-stress effects of ONO-2952, a novel translocator protein 18 kDa antagonist, in rats. Neuropharmacology. 2015 Dec;99:51-66.
2. Whitehead WE, et al. Randomised clinical trial: exploratory phase 2 study of ONO-2952 in diarrhoea-predominant irritable bowel syndrome. Aliment Pharmacol Ther. 2017 Jan;45(1):14-26.

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