

Product Data Sheet

Product Name: TMU4142

Cat. No.: GC79259

Chemical Properties

Cas. No.

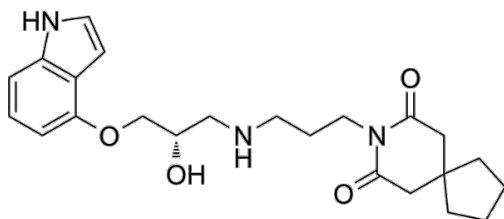
Formula $C_{23}H_{31}N_3O_4$ M.Wt 413.51

Solubility DMSO: 100 mg/mL (241.83 mM; Need ultrasonic) 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

TMU4142 is a selective 5-HT_{1A} agonist with high GoA activity. TMU4142 has weak Gi3 activity, can elicit rapid antidepressant-like effects without triggering significant activation of dorsal raphe nucleus (DRN) 5-HT_{1A} R autoreceptors or serotonergic neuron firing. TMU4142 demonstrates fast-acting efficacy in mouse models of depression. TMU4142 can be used for antidepressant research [1].

In Vivo, TMU414 (0.3 or 1.5 mg/kg, i.p.) has GoA-biased with minimal Gi3 activity, selectively activates the GoA signaling pathway (primarily localized postsynaptically and antidepressant

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

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responses) while avoiding the Gi3-mediated feedback of presynaptic autoreceptors, preserves 5-HT synthesis and release in the DRN in chronic restraint stress-induced depression model in C57BL/6 mice^[1].

In Vitro, TMU4142 agonist GoA signaling pathway and weak activity at the Gi3 pathway, shows no discernible activity at the β -arrestin-2 pathway associated with the 5-HT_{1a} receptor, demonstrates a higher potency at the 5-HT_{1a} receptor while reducing activity at β -adrenergic receptors^[1].

References:

[1]. Wang C, et al. Pathway-selective 5-HT_{1A}R agonist as a rapid antidepressant strategy. Cell. 2025 Dec 11;188(25):7222-7237.e24.

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