

Product Datasheet

ML314

Catalog No. **BP-02452** · CAS **1448895-09-7** · Form **free base** · Physical state **solid** · Color **Light yellow to yellow** · Version **1.0**
· Revision **2026-09-11**

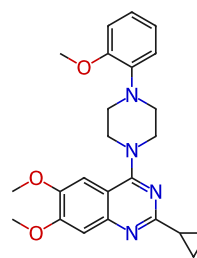
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Target GPR35; Neurotensin Receptor	Research area Neurological Disease; Endocrinology
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Molecular formula **C₂₄H₂₈N₄O₃**

Molecular weight **420.5041**

STRUCTURE



DESCRIPTION

ML314 is a potent, BBB-penetrant and β -arrestin biased molecule agonist of NTR1 ($EC_{50} = 1.9 \mu M$). ML314 shows good selectivity against NTR2 and GPR35, but does not stimulate Ca^{2+} mobilization. ML314 can attenuate amphetamine-like hyperlocomotion in dopamine transporter knockout mice. ML314 attenuates methamphetamine-associated hyperlocomotion and potentiates the psychostimulant inhibitory effects of a ghrelin antagonist in wild type mouse model. ML314 also acts as an allosteric enhancer of endogenous neurotensin. ML314 antagonizes G protein signaling. ML314 can be studied in research for methamphetamine abuse conditions .

BIOLOGICAL ACTIVITY

In Vitro

ML314 (10 μM) induces aggregation of β -arrestin in NTR1 β -arrestin2/GFP containing U2OS cells.

ML314 (10 μM , 10 min) antagonizes G protein signaling in HEK293 cells expressing NTR1.

ML314 (2 μM) increases the number of NTR1 binding in U2OS cells.

In Vivo

ML314 (20 mg/kg, i.p., single dose) reduces locomotion in Dopamine Transporter knock-out mice.

ML314 (10-30 mg/kg, i.p., single dose) reduces hyperlocomotion and conditioned place preference in C57BL/6J mice exposed to Methamphetamine.

SOLUBILITY

Soluble in DMSO

REFERENCES

[1].Hershberger P, et al. Small Molecule Agonists for the Neurotensin 1 Receptor (NTR1 Agonists). Probe Reports from the NIH Molecular Libraries Program

[2]. Barak, L. S., et al., (2016). ML314: A Biased Neurotensin Receptor Ligand for Methamphetamine Abuse. ACS chemical biology, 11(7), 1880-1890.

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