

BDNF Small Molecule Agonists

Brain-derived neurotrophic factor (BDNF) along with its high affinity receptor, tropomyosin-receptor-kinase B (TrkB) play central roles in neuronal differentiation, synapse plasticity, and memory. BDNF itself has limited clinical utility. Small molecules that mimic BDNF's neurotrophic activity may offer greater therapeutic potential.¹ Recently several new BDNF mimetics and related compounds have been identified and are described below.

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A potent TrkB partial agonist ($IC_{50}=47$ nM) which induces the activation of Trk, Akt and ERK in mouse hippocampus and striatum. It improves motor learning after traumatic brain injury in rats² and restores biochemical and functional abnormalities in mouse models.³

Product No: 10-1405 5 mg/ 25 mg/

AS-1949490

A potent and selective inhibitor of the intracellular phosphatase SHIP2 (SH2 domain-containing inositol 5'-phosphatase 2), $IC_{50} = 0.62$ μ M. Displays ca. 30-fold selectivity for SHIP2 over SHIP1. Activates insulin signaling via the Akt pathway in liver and lowers glucose levels in diabetic mice. Enhances BDNF expression in cultured cortical neurons.⁴

Product No: 10-5103 5 mg/ 25 mg/

FTY720 HCl

FTY720 (Fingolimod) is a selective sphingosine-1-phosphate receptor agonist. It increases BDNF levels and improves symptoms in a mouse model of RETTs syndrome. It promotes the neuroprotective effects of microglia and upregulates production of glial cell-derived neurotrophic factor as well as BDNF.⁵

Product No: 10-2138 50 mg/ 250 mg/

Auraptene

A bioactive terpenoid occurring in a variety of citrus fruits and possessing therapeutic potential. Displays neuritogenic activity and neuroprotective effects via suppression of inflammation and induction of GDNF and BDNF in neuronal cells.⁶

Product No: 10-2593 10 mg/ 50 mg/

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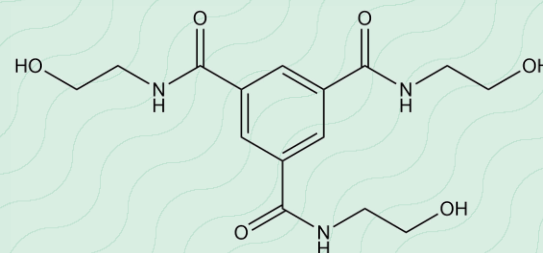
Novel nonpeptidyl p75^{NTR} ligand which induces survival signaling, inhibits pro-NGF-induced death⁷, protects neurogenesis after traumatic brain injury, promotes myelin sparing and functional recovery after spinal cord injury and reverses cholinergic neurite dystrophy in Alzheimer's disease mouse models.

Product No: 10-1526 5 mg/ 25 mg/

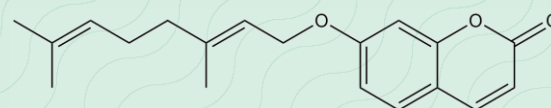
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Novel small molecule nonpeptidyl agonist at the GDNF family receptor alpha-1 (GFR α 1). It induces Ret autophosphorylation in Neuro-2A cells and promotes neurite outgrowth in a concentration-dependent manner.⁸

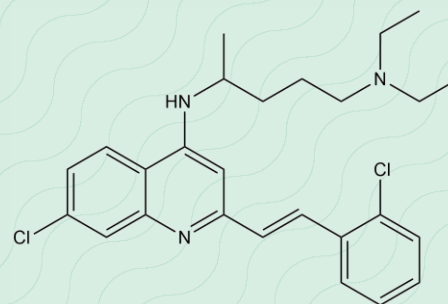
Product No: 10-1486 5 mg/ 25 mg/



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Auraptene



XIB4035

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