

# Tideglusib

**Catalog No: tcsc0613**



## Available Sizes

**Size:** 10mg

**Size:** 50mg

**Size:** 100mg



## Specifications

**CAS No:**

865854-05-3

**Formula:**

$C_{19}H_{14}N_2O_2S$

**Pathway:**

Stem Cell/Wnt;PI3K/Akt/mTOR

**Target:**

GSK-3;GSK-3

**Purity / Grade:**

>98%

**Solubility:**

DMSO : 12.5 mg/mL (37.38 mM; Need ultrasonic and warming)

**Alternative Names:**

NP-12;NP031112

**Observed Molecular Weight:**

334.39

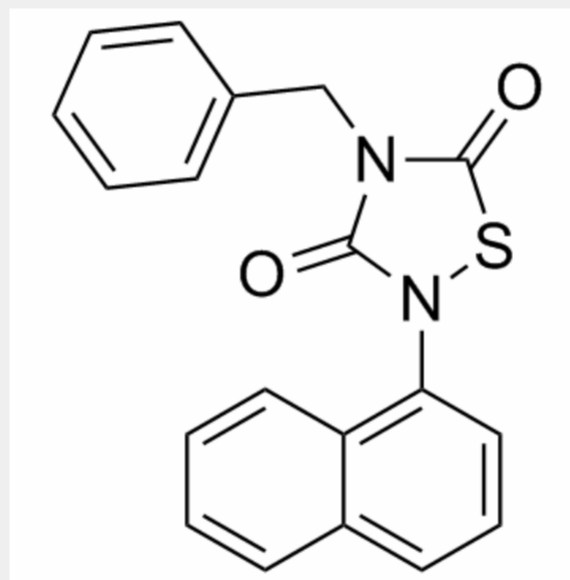
## Product Description

Tideglusib is an irreversible **GSK-3** inhibitor with **IC<sub>50</sub>** of 5 nM and 60 nM for **GSK-3 $\beta$ <sup>WT</sup>** (1 h preincubation) and **GSK-3 $\beta$ <sup>C199A</sup>** (1 h preincubation), respectively.

IC50 & Target: IC50: 5 nM (GSK-3 $\beta$ <sup>WT</sup>), 60 nM (GSK-3 $\beta$ <sup>C199A</sup>)<sup>[1]</sup>

**In Vitro:** Tideglusib (NP12) is a small heterocyclic thiadiazolidinone (TDZD) derivative, which is an ATP-non competitive inhibitor of GSK-3 $\beta$  with an IC<sub>50</sub> value in the micromolar range<sup>[2]</sup>. Incubation of both astrocyte and microglial cultures with Tideglusib (NP031112) completely abrogates the induction of TNF- $\alpha$  and COX-2 expression after glutamate treatment. These effects of NP031112 are not caused by a loss of cell viability, because the 24 h exposure of astrocyte and microglial cells to this TDZD does not modify cell viability<sup>[3]</sup>.

**In Vivo:** Tideglusib (NP12) treatment correlates with an increase of 46% as an average in the inhibitory phosphorylation of GSK-3 $\beta$  at Ser-9 in the brains of APP<sup>SW</sup>-tau<sup>VLW</sup> mice, and the levels of the inactive form of the enzyme in NP12 treated mice are comparable to those found in wild-type littermate controls ( $p=0.893$ ) ( $n=6-8$  for each treatment). NP12 treatment results in significantly decreased phosphorylation at the putative GSK-3 $\beta$ -directed sites Ser-202 (CP13) and Ser-396/404 (PHF-1) in 15-month-old mice by more than 60% ( $p=0.023$  and  $p=0.024$ , respectively)<sup>[2]</sup>. Injection of Tideglusib (NP031112) (50 mg/kg) into the rat hippocampus dramatically reduces kainic acid-induced inflammation, as measured by edema formation using T2-weighted magnetic resonance imaging and glial activation and has a neuroprotective effect in the damaged areas of the hippocampus<sup>[3]</sup>.



All products are for RESEARCH USE ONLY. Not for diagnostic & therapeutic purposes!