## Chemical Properties

<table>
<thead>
<tr>
<th>Product Name:</th>
<th>Tideglusib</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cas No.:</td>
<td>865854-05-3</td>
</tr>
<tr>
<td>M.Wt:</td>
<td>334.39</td>
</tr>
<tr>
<td>Formula:</td>
<td>C19H14N2O2S</td>
</tr>
</tbody>
</table>

### Chemical Name:

4-benzyl-2-naphthalen-1-yl-1,2,4-thiadiazolidine-3,5-dione

### Canonical SMILES:

C1=CC=C(C=C1)CN2C(=O)N(SC2=O)C3=CC=CC4=CC=CC=C43

### Solubility:

Limited solubility

### 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.

### Shopping Condition:

Evaluation sample solution: ship with blue ice
All other available size: ship with RT, or blue ice upon request

## Biological Activity

### Targets:

GSK-3

### Pathways:

PI3K/Akt/mTOR Signaling >> GSK-3

### Description:

IC50: A potent, selective and irreversible non-ATP-competitive GSK-3β suppressor with an IC50 of 60 nM.

Tideglusib is a GSK-3 inhibitor currently undergoing phase II clinical trials for Alzheimer disease and progressive supranuclear palsy. Sustained oral administration of Tideglusib to animal models could down-regulates Tau hyper-phosphorylation, reduces brain amyloid plaque load, promotes learning and memory as well as prevents neuronal loss. [1]

In vitro: In vitro studies showed that after the unbound Tideglusib was removed from the
reaction medium, the enzyme function could not be recovered. In addition, the dissociation rate constant of the reaction was as low as nearly zero. All above findings suggested that Tideglusib blocked GSK-3 irreversibly. Such irreversibility might be responsible for the non-competitive inhibition pattern with respect to ATP of Tideglusib and perhaps other structurally related compounds. [1]

In vivo: Based on double transgenic mice model co-expressing human mutant APP and tau, a study demonstrated that Tideglusib could suppress GSK-3, reduced amyloid and tau pathologies, blocked neuronal cell death and memory deficits in vivo. [2]

Clinical trial: A pilot, double-blind, placebo-controlled and randomized clinical trial was conducted to study the effect of Tideglusib in AD patients with an escalating dose. Thirty patients with mild to moderate AD were orally administered with Tideglusib in escalating doses of 400, 600, 800 and 1000 mg for periods of 4, 4, 6 and 6 weeks, respectively. This pilot study proved the safety and effectiveness of Tideglusib in AD patients. [3]

Reference:

Caution

FOR RESEARCH PURPOSES ONLY.
NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

Specific storage and handling information for each product is indicated on the product datasheet. Most ApexBio products are stable under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage temperature. Shortterm storage of many products are stable in the short-term at temperatures that differ from that required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.

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