# Product Data Sheet

## Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product Name:</strong></td>
<td>DAPT (GSI-IX)</td>
</tr>
<tr>
<td><strong>Cas No.:</strong></td>
<td>208255-80-5</td>
</tr>
<tr>
<td><strong>M.Wt:</strong></td>
<td>432.46</td>
</tr>
<tr>
<td><strong>Formula:</strong></td>
<td>C23H26F2N2O4</td>
</tr>
<tr>
<td><strong>Synonyms:</strong></td>
<td>gamma-Secretase Inhibitor IX, DAPT, GSI-IX</td>
</tr>
<tr>
<td><strong>Chemical Name:</strong></td>
<td>tert-butyl (2S)-2-[(2S)-2-[[2-(3,5-difluorophenyl)acetyl]amino]propanoyl]amin o]-2-phenylacetate</td>
</tr>
<tr>
<td><strong>Canonical SMILES:</strong></td>
<td>CC(C(=O)NC(C1=CC=CC=C1)(=O)OC(C)(C)CNC(=O)CC2=CC(=CC(=C2)F)F</td>
</tr>
<tr>
<td><strong>Solubility:</strong></td>
<td>≥21.623mg/mL in DMSO</td>
</tr>
<tr>
<td><strong>Storage:</strong></td>
<td>Store at 4°C</td>
</tr>
<tr>
<td><strong>General tips:</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Shopping Condition:</strong></td>
<td>Evaluation sample solution: ship with blue ice. All other available size: ship with RT, or blue ice upon request</td>
</tr>
</tbody>
</table>

## Biological Activity

**Targets:** Neuroscience  
**Pathways:** Amyloid β  
**Description:**  
DAPT, N-[N-(3,5-Difluorophenacyl)-L-alanyl]-S-phenylglycine t-butyl Ester, is a potent and specific inhibitor of γ-secretase, a multimeric membrane protein complex that catalyzes proteolytic cleavage of amyloid precursor protein (APP) resulting in the accumulation of amyloid-β...
(Aβ) peptides which is associated with early on-set of familial Alzheimer’s disease (AD). It directly binds to the C-terminal fragment of the catalytic center of γ-secretase, presenilin (PS), especially within the transmembrane domain 7 or more C-terminal region, resulting in the synthesis of a photoactivable DAPT derivative. Through oral administration, DAPT dose-dependently reduced Aβ peptides levels in vivo in Plasma and cerebrospinal fluid in young (6 months old, plaque-free) and aged (17 months old, plaque-bearing) Tg2576 mice.

Reference:

Protocol

Cell experiment:

Cell lines SHG -44 human glioma cell line
Preparation method The solubility of this compound in DMSO is >10 mM. General tips for obtaining a higher concentration: Please warm the tube at 37 °C for 10 minutes and/or shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.
Reacting conditions 5d; 1.0 μM
Applications Cell viability in each group was detected by MTT. Compared with those in group A (control), proliferation of SHG -44 cells in group B (0.5 μM), C (1μM), D (5 μM) and E (10 μM) were inhibited by DAPT. For group B and A, the results were significantly different (P<0.05). It indicated that DAPT is a concentration-dependent inhibitor that may obviously inhibit SHG-44 cells proliferation. As concentration of DAPT higher than 1.0 μmol/L showed no more obvious disparities in cell inhibition, concentration of 1.0 μmol/L was our priority.

Animal experiment [3]:

Animal models Male Balb/C mice
Dosage form 10 mg/kg/day; subcutaneously injected

Applications CT26 colon adenocarcinoma cells (5 × 10^5 cells) in 500 μL of Phosphate buffer solution (PBS) were inoculated subcutaneously into the dorsum of all mice. Administration of DAPT significantly reduced serum sVEGFR1, while could not change serum VEGF concentration in control mice. Immunohistochemical study of the tumors showed that CD31 positive cells were reduced after DAPT administration (280.6 ± 81 vs. 386 ± 59.9 CD31 positive cells/mm^2), although it was not statistically significant.

Other notes Please test the solubility of all compounds indoor, and the actual solubility may slightly differ with the theoretical value. This is caused by an experimental system error and it is normal.

Reference:

Product Citations

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.