Small Molecules

DAPT

Notch pathway inhibitor; Inhibits γ-secretase

Catalog # 72082

5 mg

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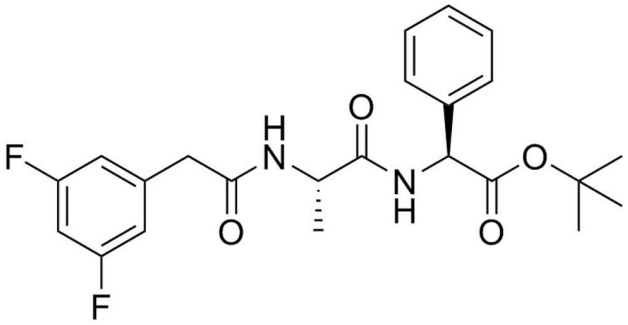
Product Description

DAPT is an inhibitor of the γ-secretase complex. Notch is a key target of γ-secretase, therefore DAPT indirectly inhibits the Notch pathway. Other targets of γ-secretase that would be influenced by DAPT include amyloid precursor protein, E-cadherin, and ErbB4 (Dovey et al.).

Molecular Name: DAPT
Alternative Names: GSI-IX; LY-374973
CAS Number: 208255-80-5
Chemical Formula: $C_{23}H_{26}F_2N_2O_4$
Molecular Weight: 432.5 g/mol
Purity: ≥ 95%
Chemical Name: N-[2S-(3,5-difluorophenyl)acetyl]-L-alanyl-2-phenyl-1,1-dimethylethyl ester-glycine
Structure:



Properties

Physical Appearance: A crystalline solid

Storage: Product stable at -20°C as supplied. Protect from prolonged exposure to light.
Stable as supplied for 12 months from date of receipt.

Solubility:
· Absolute ethanol ≤ 2.3 mM
· DMSO ≤ 55 mM
For example, to prepare a 10 mM stock solution in DMSO, resuspend 5 mg in 1.16 mL of DMSO.

Prepare stock solution fresh before use. Information regarding stability of small molecules in solution has rarely been reported, however, as a general guide we recommend storage in DMSO at -20°C. Aliquot into working volumes to avoid repeated freeze-thaw cycles. The effect of storage of stock solution on compound performance should be tested for each application.

Compound has low solubility in aqueous media. For use as a cell culture supplement, stock solution should be diluted into culture medium immediately before use. Avoid final DMSO concentration above 0.1% due to potential cell toxicity.

Published Applications

MAINTENANCE AND SELF-RENEWAL
· Reduces colony-forming efficiency of mouse neural stem cells (Androutsellis-Theotokis et al.).
· Enhances radiation-induced cell death of glioma stem cells (Wang et al.).
DIFFERENTIATION
· Promotes differentiation of nociceptors from human pluripotent stem cells, in combination with several other small molecules (Chambers et al.).
· Promotes differentiation of neurons from human and mouse embryonic stem (ES) cells (Crawford & Roelink; Elkabetz et al.).
· Promotes differentiation of retinal pigment epithelium from mouse ES cells (Osakada et al.).
· Promotes differentiation of pancreatic cells from human pluripotent stem cells (D'Amour et al.).
CANCER RESEARCH
· Reduces mammosphere-forming efficiency of breast cancer cell lines and ductal carcinoma in situ cells (Farnie et al.; Harrison et al.).

References

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Osakada F et al. (2009) Stepwise differentiation of pluripotent stem cells into retinal cells. Nat Protoc 4(6): 811–24.
Wang J et al. (2010) Notch promotes radioresistance of glioma stem cells. Stem Cells 28(1): 17–28.

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