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DATASHEET

DAPT

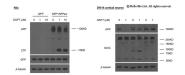
Product overview

NameDAPTCat NoHB3345Biological actionInhibitorPurity>98%

Description γ-secretase inhibitor and classical notch inhibitor. Induces neuronal differentiation. 3D Growth matrix

component and used in cerebral organoid differentiation media.

Images



Biological Data

Biological description

Overview

DAPT is a y-secretase inhibitor which blocks notch signaling. It is a classical notch inhibitor.

It has been reported to inhibit amyloid beta $(A\beta)$ in a dose-dependent manner although at low doses, an increase in $A\beta$ production in cell culture and animal models has also been reported.

Uses & applications

DAPT is used in a variety of stem cell applications.

It has been shown that in combination with other small molecules that inhibit SMAD (SB 431542, LDN193189), activate WNT (CHIR99021) and inhibit FGF-signaling (SU5402), DAPT yields 75% post-mitotic neurons in 11 days of differentiation. These are defined as peripheral sensory neurons.

Recently, DAPT in combination with LDN193189, SB431542, XAV939, PD0325901 and SU5402 has been shown to accelerate induction of early-born cortical neurons that have mature electrophysiological properties by day 16 of differentiation.

DAPT also enhances neuronal differentiation in ESC-derived embryoid bodies independent of Hhsignaling.

Additionally, the compound promotes cardiac differentiation of murine pluripotent stem cells and enhances the reprogramming of mouse fibroblasts to iCLMs (induced cardiac-like myocytes).

It is also used as a 3D Growth matrix component and used in cerebral organoid differentiation media.

Solubility & Handling

Solubility overview Soluble in DMSO (100mM)

Storage instructions +4°C

Storage of solutions Prepare and use solutions on the same day if possible. Store solutions at -20 °C for up to one month if

storage is required. Equilibrate to RT and ensure the solution is precipitate free before use.

Shipping Conditions

Important

Stable for ambient temperature shipping. Follow storage instructions on receipt.

This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not

for human or veterinary use.

Chemical Data

Chemical name N-[N-(3,5-Difluorophenacetyl-L-alanyl)]-S-phenylglycine tbutyl ester

Molecular Weight

Chemical structure

Source Synthetic

InChi InChi=1S/C23H26F2N2O4/c1-14(26-19(28)12-15-10-17(24)13-18(25)11-15)21(29)27-20(16-8-6-5-7

-9-16)22(30)31-23(2,3)4/h5-11,13-14,20H,12H2,1-4H3,(H,26,28)(H,27,29)/t14-,20-/m0/s1

InChiKey DWJXYEABWRJFSP-XOBRGWDASA-N

432.5

MDL numberMFCD04974585AppearanceWhite to off-white solid

References

The Notch signaling inhibitor DAPT down-regulates cdk5 activity and modulates the distribution of neuronal cytoskeletal proteins.

Kanungo et al (2008) J Neurochem 106(5) **PubMedID** 18662245

The notch response inhibitor DAPT enhances neuronal differentiation in embryonic stem cell-derived embryoid bodies independently of sonic hedgehog signaling.

Crawford and Roelink (2007) Dev Dyn 236(3) **PubMedID** 17295317

Functional gamma-secretase inhibitors reduce beta-amyloid peptide levels in brain.

Dovey et al (2001) J Neurochem 76(1) **PubMedID**11145990

Lingo-1 shRNA and Notch signaling inhibitor DAPT promote differentiation of neural stem/progenitor cells into neurons.

Wang et al (2015) Brain Res 8993(15)

PubMedID 26607252