

Product Data Sheet

Product Name: Diarylpropionitrile(DPN)

Cat. No.: GC17688

Chemical Properties

Cas. No. 1428-67-7

Chemical Name (R)-2,3-bis(4-hydroxyphenyl)propanenitrile

SMILES OC1=CC=C(C=C1)[C@H](C#N)CC(C=C2)=CC=C2O

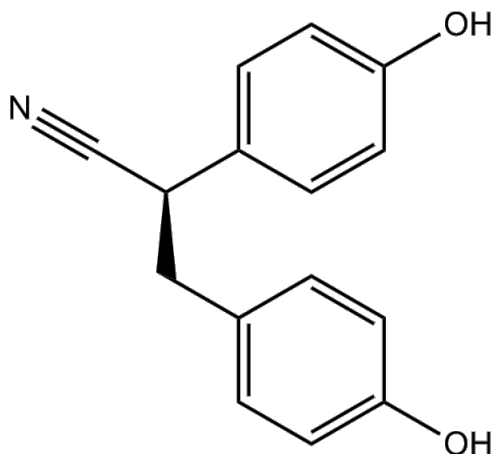
Formula $C_{15}H_{13}NO_2$ M.Wt 239.27

Solubility DMSO : 100 mg/mL (417.94 mM) Storage Desiccate 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.

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

Structure



Background

DPN (Diarylpropionitrile) is a non-steroidal estrogen receptor β (ER β) selective ligand. IC50 value: Target: ER β ligand in vitro: Pre-treatment with 1-100 nM DPN significantly decreased neuronal cell death by increasing cell viability through a significant attenuation in the reactive oxygen species level, downregulation of pro-apoptotic activated caspase-3 and Bax, and upregulation of anti-apoptotic Bcl-2, thereby mitigating apoptotic morphological alterations. DPN pre-treatment decreased

Caution: Product has not been fully validated for medical applications. For research use only.

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the expression levels of pro-inflammatory cytokines IL-1 β and IL-6 through attenuation of A β 1-42-induced phosphorylation of mitogen-activated protein kinases JNK and p38. In addition, DPN enhanced ERK1/2 and Akt phosphorylation depressed by A β 1-42 [1]. ER β was expressed in RAW264.7 cells, and DPN statistically significantly decreased LPS-induced RANTES production in RAW264.7 cells. Small interfering RNA targeting the ER β gene inhibited the effect of DPN on RANTES production. In addition, DPN inhibited nuclear translocation and phosphorylation of p65 by inhibiting I κ B degradation and thus prohibited the activation of nuclear factor κ B (NF- κ B) [3]. *in vivo*: DPN treatment during EAE did not attenuate demyelination, only partially improved axon conduction, and did not activate the phosphatidylinositol 3-kinase/serine-threonine-specific protein kinase/mammalian target of rapamycin signaling pathway in ER β CKO mice [2].

References:

- [1]. Suwanna N, et al. Neuroprotective effects of diarylpropionitrile against β -amyloid peptide-induced neurotoxicity in rat cultured cortical neurons. *Neurosci Lett*. 2014 Aug 22;578:44-9.
- [2]. Khalaj AJ, et al. Estrogen receptor (ER) β expression in oligodendrocytes is required for attenuation of clinical disease by an ER β ligand. *Proc Natl Acad Sci U S A*. 2013 Nov 19;110(47):19125-30.
- [3]. Huang SY, et al. Estrogen receptor β agonist diarylpropionitrile inhibits lipopolysaccharide-induced regulated on activation normal T cell expressed and secreted (RANTES) production in macrophages by repressing nuclear factor κ B activation. *Fertil Steril*. 2013 Jul;100(1):234-40.

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