

Product Data Sheet

Product Name: P7C3
Cat. No.: GC14692

Chemical Properties

Cas. No. 301353-96-8

Chemical Name 1-(3,6-dibromo-9H-carbazol-9-yl)-3-(phenylamino)propan-2-ol

SMILES BrC1=CC(C2=C3C=CC(Br)=C2)=C(N3CC(O)CNC4=CC=CC=C4)C=C1

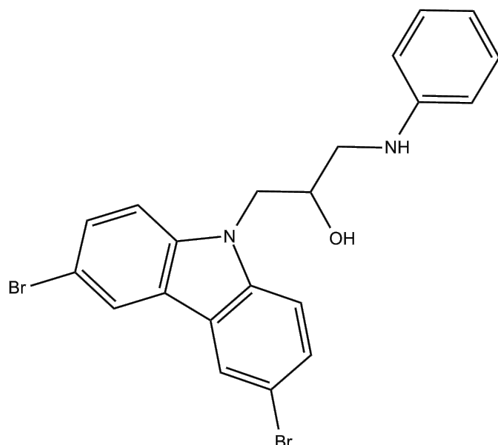
Formula $C_{21}H_{18}Br_2N_2O$ M.Wt 474.19

Solubility $\geq 22.7\text{mg/mL}$ in DMSO 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.

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

Structure



Background

Target: Nicotinamide phosphoribosyltransferase (NAMPT)

IC50: N/A

P7C3 is an orally bioavailable proneurogenic and neuroprotective chemical which targets NAMPT enzyme [1]. NAMPT, the rate-limiting enzyme in the salvage pathway plays a critical role in the

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conversion of nicotinamide into nicotinamide adenine mononucleotide (NMN) and nicotinamide adenine dinucleotide (NAD) [2].

In vitro: P7C3 (1, 10, and 100 nM) preserved mitochondrial membrane potential in parallel to proneurogenic activity [1]. Administration of P7C3 (5 μ M) to U2OS cells treated with doxorubicin, which induced NAD depletion, induced an increasing in intracellular NAD levels and concomitant protection from doxorubicin-mediated toxicity through the NAMPT-mediated salvage [2].

In vivo: P7C3 (5 to 40 mg/kg, oral administration) showed its proneurogenic activity through protecting newborn neurons from apoptosis. In addition, P7C3 (10 mg/kg, oral administration) enhanced hippocampal neurogenesis, preserved cognitive capacity, and prevented weight loss in terminally aged rats [1]. P7C3 (437.5 μ g, twice daily via i.p. injections) treatment restored hippocampal neurogenesis in the Ts65Dn mouse model of Down syndrome [3].

References:

1. Pieper AA, Xie S, Capota E, Estill SJ, Zhong J, Long JM, et al. Discovery of a proneurogenic, neuroprotective chemical. *Cell*. 2010;142(1):39-51.
2. Wang G, Han T, Nijhawan D, Theodoropoulos P, Naidoo J, Yadavalli S, et al. P7C3 neuroprotective chemicals function by activating the rate-limiting enzyme in NAD salvage. *Cell*. 2014;158(6):1324-34.
3. Latchney SE, Jaramillo TC, Rivera PD, Eisch AJ, Powell CM. Chronic P7C3 treatment restores hippocampal neurogenesis in the Ts65Dn mouse model of Down Syndrome [Corrected]. *Neurosci Lett*. 2015;591:86-92.

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