

Product Data Sheet

Product Name: PB1
Cat. No.: GC63138

Chemical Properties

Cas. No. 188714-28-5

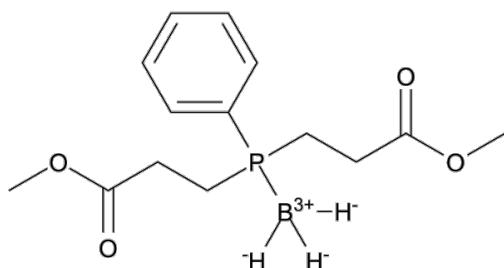
Formula $C_{14}H_{22}BO_4P$ M.Wt 296.11

Solubility DMSO : 100 mg/mL (337.71 mM; Storage 4°C, stored under nitrogen
Need ultrasonic)

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

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

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PB1 is a potent intracellular disulfide reducing agent with several advantages including good cell permeability, the ability to form a high intracellular concentration gradient, and stability. PB1 is a borane-protected TCEP (tris(2-carboxyethyl)phosphine) analogue. PB1 increases retinal ganglion cells survival after axotomy in vitro at nanomolar and picomolar concentrations. PB1 can be used for the research of neuroprotective[1][2][3].

PB1 produces a robust activation of the BDNF effector ERK1/2. PB1 promotes RGC survival[1].

PB1 (150 μ M; intraocular injection; 1 week) attenuates the loss of both RGC (retinal ganglion cells) soma and axons in experimental glaucoma[1]. PB1 protects RGC soma in experimental glaucoma. PB1 single dose limits the biological activity in vivo. PB1 attenuates the loss of both RGC soma and axons in experimental glaucoma. PB1 (0.001~100 μ M; 72 hours) is effective at rescuing acutely axotomized retinal ganglion cells[1][2].

[1]. Almasieh M, et al. A cell-permeable phosphine-borane complex delays retinal ganglion cell death after axonal injury through activation of the pro-survival extracellular signal-regulated kinases 1/2 pathway. J Neurochem. 2011;118(6):1075-1086.

[2]. Schlieve CR, et al. Synthesis and characterization of a novel class of reducing agents that are highly neuroprotective for retinal ganglion cells. Exp Eye Res. 2006;83(5):1252-1259.

[3]. Niemuth NJ, et al. Intracellular disulfide reduction by phosphine-borane complexes: Mechanism of action for neuroprotection. Neurochem Int. 2016;99:24-32.

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