

Certificate of Analysis

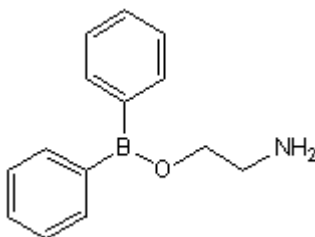
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Product Name: 2-APB
CAS Number: 524-95-8
IUPAC Name: 2-Aminoethoxydiphenylborane

Catalog No.: 1224 **Batch No.:** 3
EC Number: 208-366-5

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₁₄H₁₆BNO
Batch Molecular Weight: 225.1
Physical Appearance: White solid
Solubility: ethanol to 10 mM with gentle warming
DMSO to 100 mM with gentle warming
Storage: Store at RT
Batch Molecular Structure:



2. ANALYTICAL DATA

Melting Point: At 191°C
HPLC: Shows 100% purity
¹H NMR: Consistent with structure
Mass Spectrum: Consistent with structure
Microanalysis:

	Carbon Hydrogen Nitrogen		
Theoretical	74.7	7.16	6.22
Found	74.44	7.1	6.31

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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IUPAC Name: 2-Aminoethoxydiphenylborane

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Description:

A functional and membrane permeable D-myo-inositol 1,4,5-trisphosphate (IP₃) receptor antagonist (IC₅₀ = 42 μM). Stimulates store-operated calcium (SOC) release at low concentrations (< 10 μM) and inhibits it at higher concentrations (up to 50 μM). Increases STIM-Orai channel conductance and limits ion selectivity. Modulator of TRP channels; blocks TRPC1, TRPC3, TRPC5, TRPC6, TRPV6, TRPM3, TRPM7, TRPM8 and TRPP2 and at higher concentrations stimulates TRPV1, TRPV2 and TRPV3. Also blocks specific gap channel subtypes.

Physical and Chemical Properties:

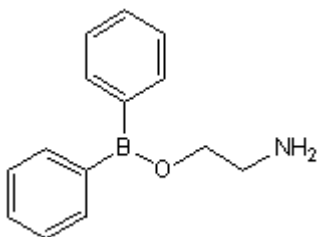
Batch Molecular Formula: C₁₄H₁₆BNO

Batch Molecular Weight: 225.1

Physical Appearance: White solid

Minimum Purity: >98%

Batch Molecular Structure:



References:

Maruyama et al (1997) 2APB, 2-aminoethoxydiphenyl borate, a membrane-penetrable modulator of Ins(1,4,5)P₃-induced Ca²⁺ release. *J.Biochem.* **122** 498. PMID: 9348075.

Xu et al (2005) Block of TRPC5 channels by 2-aminoethoxydiphenyl borate: a differential, extracellular and voltage-dependent effect. *Br.J.Pharmacol.* **145** 405. PMID: 15806115.

Bai et al (2006) Block of specific gap junction channel subtypes by 2-aminoethoxydiphenyl borate (2-APB). *J.Pharmacol.Exp.Ther.* **319** 1452. PMID: 16985167.

Togashi et al (2008) Inhibition of the transient receptor potential cation channel TRPM2 by 2-aminoethoxydiphenyl borate (2-APB). *Br.J.Pharmacol.* **153** 1324. PMID: 18204483.

Varnai et al (2009) STIM and Orai: the long-awaited constituents of store-operated calcium entry. *TiPs* **30** 118. PMID: 19187978.

Storage: Store at RT

Solubility & Usage Info:

ethanol to 10 mM with gentle warming
DMSO to 100 mM with gentle warming

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

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bio-techne.com

info@bio-techne.com

techsupport@bio-techne.com

North America

Tel: (800) 343 7475

China

info.cn@bio-techne.com

Tel: +86 (21) 52380373

Europe Middle East Africa

Tel: +44 (0)1235 529449

Rest of World

www.tocris.com/distributors

Tel: +1 612 379 2956