

Product Name: SB 4

Catalog No.: 6881

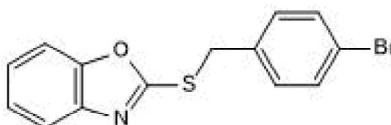
Batch No.: 1

CAS Number: 100874-08-6

IUPAC Name: 2-[[4-Bromophenyl)methyl]thio]benzoxazole

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₁₄H₁₀BrNOS
Batch Molecular Weight: 320.2
Physical Appearance: Beige solid
Solubility: DMSO to 100 mM
 ethanol to 20 mM
Storage: Store at -20°C
Batch Molecular Structure:



2. ANALYTICAL DATA

TLC: R_f = 0.45 (Ethyl acetate:Petroleum ether [95:5])
HPLC: Shows 99.9% purity
¹H NMR: consistent with structure
Mass Spectrum: Consistent with structure
Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	52.51	3.15	4.37
Found	52.69	3.13	4.51

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

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IUPAC Name: 2-[[4-Bromophenyl)methyl]thio]benzoxazole

Description:

SB 4 is a potent BMP4 agonist (EC₅₀ = 74 nM). Activates canonical BMP signaling and increases SMAD-1/5/9 phosphorylation, with no effect on p-SMAD-2, p-SMAD-3 or p-TAK1. Bypasses noggin-induced inhibition of type I BMP receptors. When used in combination, SB 4 enhances BMP4 signaling and embryonic stem cell differentiation.

Physical and Chemical Properties:

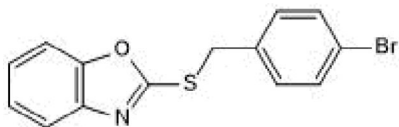
Batch Molecular Formula: C₁₄H₁₀BrNOS

Batch Molecular Weight: 320.2

Physical Appearance: Beige solid

Minimum Purity: ≥99%

Batch Molecular Structure:



References:

Hayaei Tehrani et al (2022) A comparison between BMP4 and SB4 in inducing germ line gene expression pattern during embryonic stem cells differentiation. *Differentiation* **123** 9. PMID: 34864442.

Bradford et al (2019) High-throughput screens for agonists of bone morphogenetic protein (BMP) signaling identify potent benzoxazole compounds. *J.Biol.Chem.* **294** 3125. PMID: 30602563.

Storage: Store at -20°C

Solubility & Usage Info:

DMSO to 100 mM

ethanol to 20 mM

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. *Unless contradicted by product-specific protocols or instructions, our standard recommendations apply:

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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