

Certificate of Analysiswww.tocris.com**Product Name:** Bumetanide**Catalog No.:** 3108**Batch No.:** 4

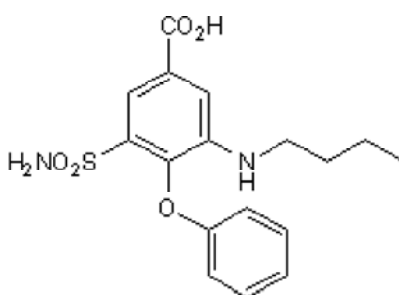
CAS Number: 28395-03-1

EC Number: 249-004-6

IUPAC Name: 3-(Aminosulfonyl)-5-(butylamino)-4-phenoxybenzoic acid

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₁₇H₂₀N₂O₅S
Batch Molecular Weight: 364.42
Physical Appearance: White solid
Solubility: DMSO to 100 mM
Storage: Store at RT
Batch Molecular Structure:

**2. ANALYTICAL DATA**

HPLC: Shows 100.0% purity
¹H NMR: Consistent with structure
Mass Spectrum: Consistent with structure

Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	56.03	5.53	7.69
Found	56.07	5.47	7.64

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

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Description:

Bumetanide is a loop diuretic that inhibits the Na⁺/2Cl⁻/K⁺ (NKCC) cotransporter. More potent than furosemide (Cat. No. 3109). Bumetanide improves electrophysiological, pathological and cognitive deficits in APOE4 knock-in mice. RNA sequencing of neurons derived from APOE4 induced pluripotent stem cell (iPSC) shows Bumetanide reverses Alzheimer's disease transcriptomic signatures.

Physical and Chemical Properties:

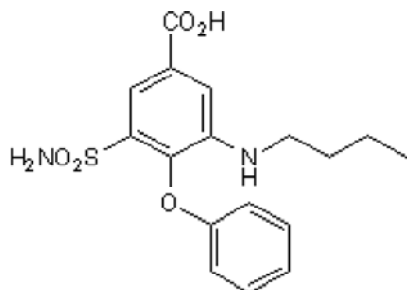
Batch Molecular Formula: C₁₇H₂₀N₂O₅S

Batch Molecular Weight: 364.42

Physical Appearance: White solid

Minimum Purity: ≥98%

Batch Molecular Structure:



Storage: Store at RT

Solubility & Usage Info:

DMSO to 100 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. 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.

References:

Taubes *et al* (2021) Experimental and real-world evidence supporting the computational repurposing of bumetanide for APOE4-related Alzheimer's disease. *Nature Aging* **1** 932. PMID: 36172600.

Morita *et al* (1999) Functional evidence for involvement of bumetanide-sensitive Na⁺K⁺2Cl⁻ cotransport in the hepatoportal Na⁺ receptor of the sprague-dawley rat. *Neurosci.Letts.* **264** 65. PMID: 10320015.

Isenring and Forbush (1997) Ion and bumet. binding by the Na-K-Cl cotransporter. *J.Biol.Chem.* **272** 24556. PMID: 9305921.

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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