

## Certificate of Analysis

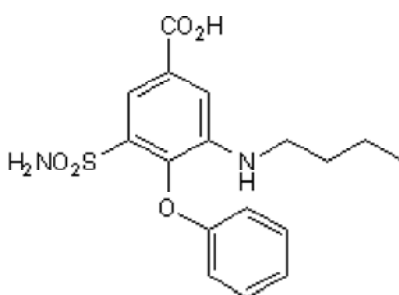
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**Product Name:** Bumetanide  
**CAS Number:** 28395-03-1  
**IUPAC Name:** 3-(Aminosulfonyl)-5-(butylamino)-4-phenoxybenzoic acid

**Catalog No.:** 3108      **Batch No.:** 3  
**EC Number:** 249-004-6

### 1. PHYSICAL AND CHEMICAL PROPERTIES

**Batch Molecular Formula:** C<sub>17</sub>H<sub>20</sub>N<sub>2</sub>O<sub>5</sub>S  
**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 99.9% purity  
**<sup>1</sup>H NMR:** Consistent with structure  
**Mass Spectrum:** Consistent with structure

**Microanalysis:**

	Carbon	Hydrogen	Nitrogen
Theoretical	56.03	5.53	7.69
Found	56.05	5.57	7.57

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

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**3**

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**Description:**

Bumetanide is a loop diuretic that inhibits the Na<sup>+</sup>/2Cl<sup>-</sup>/K<sup>+</sup> (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:**

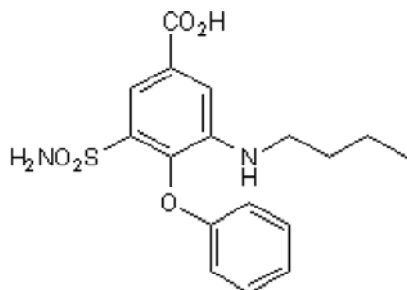
Batch Molecular Formula: C<sub>17</sub>H<sub>20</sub>N<sub>2</sub>O<sub>5</sub>S

Batch Molecular Weight: 364.42

Physical Appearance: White solid

**Minimum Purity:** ≥99%

**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<sup>+</sup>K<sup>+</sup>2Cl<sup>-</sup> cotransport in the hepatoportal Na<sup>+</sup> receptor of the sprague-dawley rat. *Neurosci.Letts.* **264** 65. PMID: 10320015.

**Iserning 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