



LKT Laboratories, Inc.

Bumetanide

Phone: 888-558-5227
651-644-8424
Fax: 888-558-7329
Email: getinfo@lktlabs.com
Web: lktlabs.com

Product Information

Product ID B8248

CAS No. 28395-03-1

Chemical Name 3-(butylamino)-4-phenoxy-5-sulfamoylbenzoic acid

Synonym

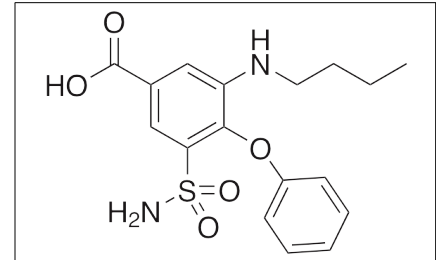
Formula $C_{17}H_{20}N_2O_5S$

Formula Wt. 364.42

Melting Point 230-232 °C

Purity ≥98%

Solubility Ethanol, DMSO



Bulk quantities available upon request

Product ID Size

B8248 250 mg

B8248 1 g

Store Temp Ambient

Ship Temp Ambient

Description Bumetanide is a loop diuretic that is clinically used to treat congestive heart failure. Bumetanide exhibits natriuretic activity, inhibiting $Na^+/K^+/2Cl^-$ symporter 1 (NKCC1) and K^+/Ca^{2+} co-transporter 2 (KCC2), decreasing fluid secretion and Na^+/K^+ transport. Bumetanide also exhibits anxiolytic, neuroprotective, and antiepileptic/anticonvulsant activities. Bumetanide induces hyperpolarization in kidney cells, increasing whole-cell conductance and intracellular Ca^{2+} levels. In animal models, bumetanide decreases conditioned anxiety in contextual fear and startle assays. In injured neurons, this compound inhibits upregulation of low-affinity NGF/pan-neurotrophin receptor p75NTR, preventing cell death. Additionally, bumetanide's inhibition of NKCC1 co-transporters in neurons alters GABA signaling, inhibiting seizure-induced accumulation of Cl^- and facilitation of recurrent seizures in vivo.

References Wang T, Yang YQ, Karasawa T, et al. Bumetanide hyperpolarizes madin-darby canine kidney cells and enhances cellular gentamicin uptake by elevating cytosolic Ca^{2+} thus facilitating intermediate conductance Ca^{2+} -activated potassium channels. *Cell Biochem Biophys.* 2013 Apr;65(3):381-98. PMID: 23109177.

Krystal AD, Sutherland J, Hochman DW. Loop diuretics have anxiolytic effects in rat models of conditioned anxiety. *PLoS One.* 2012;7(4):e35417. PMID: 22514741.

Shulga A, Magalhães AC, Autio H, et al. The loop diuretic bumetanide blocks posttraumatic p75NTR upregulation and rescues injured neurons. *J Neurosci.* 2012 Feb 1;32(5):1757-70. PMID: 22302815.

Dzhala VI, Kuchibhotla KV, Glykys JC, et al. Progressive NKCC1-dependent neuronal chloride accumulation during neonatal seizures. *J Neurosci.* 2010 Sep 1;30(35):11745-61. PMID: 20810895.

Feig PU. Cellular mechanism of action of loop diuretics: implications for drug effectiveness and adverse effects. *Am J Cardiol.* 1986 Jan 24;57(2):14A-19A. PMID: 3511652.

Caution: This product is intended for laboratory and research use only. It is not for human or drug use.