

Bumetanide

Catalog No: tcsc1821



Available Sizes

Size: 1g

Size: 5g



Specifications

CAS No:

28395-03-1

Formula:

$C_{17}H_{20}N_2O_5S$

Pathway:

Membrane Transporter/Ion Channel

Target:

NKCC

Purity / Grade:

>98%

Solubility:

DMS : ≥ 100 mg/mL (274.41 mM); H₂O :

Alternative Names:

Ro 10-6338;PF 1593

Observed Molecular Weight:

364.42

Product Description

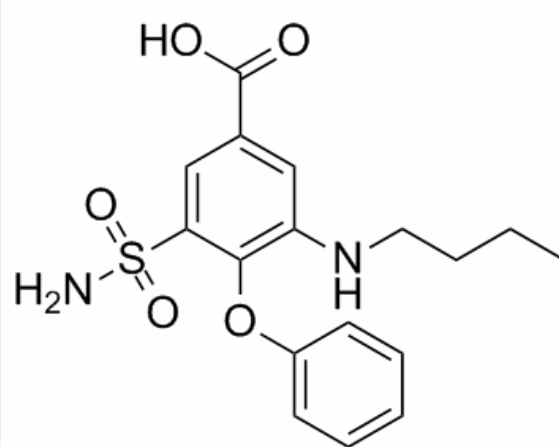
Bumetanide(Ro 10-6338; PF 1593) is an inhibitor of Na(+)-K(+)-2Cl(-) co-transporter (NKCC) with an IC₅₀ of 0.6 uM.

IC50 Value: 0.6 μ M [1]

Target: NKCC (Na-K-Cl cotransporter)

in vitro: Cultured chick cardiac cells possess a Na⁺K⁺Cl-co-transport system that is inhibited by the "loop diuretics" bumetanide (IC₅₀ = 0.6 μ M). The K_{0.5} values for Cl⁻ and Na⁺ activation of the bumetanide-sensitive ⁸⁶Rb⁺ uptake are 59 mM and 40mM respectively. Bumetanide also inhibits a 22Na⁺ uptake component that is suppressed when external Cl⁻ or K⁺ are substituted by impermeant ions. The ratio of bumetanide-sensitive ⁸⁶Rb⁺ to 22Na⁺ uptake is close to 1. The cardiac Na⁺/K⁺/Cl⁻ cotransport is a major uptake pathway for Na⁺ and K⁺ [1]. Bumetanide inhibits ouabain-resistant ⁸⁶Rb(K⁺) influx with IC₅₀ of 0.1, 5.0, and 0.05 μ M for J774.2, CT2 and J7H1 macrophages, respectively [2].

in vivo: Intraperitoneal injection of 50 or 100 mg bumetanide/kg body weight resulted in an acute and transient hyperglycaemia. Pretreatment with 240 mg probenecid/kg body weight reduced the diuretic effect but potentiated the hyperglycaemic effect of bumetanide (50 mg/kg body weight). The glucose tolerance was impaired, and there was an elevated serum glucose and glucose/insulin ratio 2 h after a single injection of bumetanide (100 mg/kg body weight) [3].



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