

Product Data Sheet

Product Name: Bethanidine hydriodide

Cat. No.: GC81870

Chemical Properties

Cas. No. 2863-34-5

Formula $C_{10}H_{16}IN_3$

M.Wt 305.16

Solubility Storage Store at -20°C, away from moisture

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure



Background

Bethanidine hydriodide is an orally active antihypertensive agent and adrenergic neuron blocker. Bethanidine hydriodide exerts its antihypertensive effect by inhibiting the release of norepinephrine from sympathetic nerve terminals. Bethanidine hydriodide exhibits anti-ventricular arrhythmic activity. Bethanidine hydriodide can be used in research related to hypertension, ventricular tachycardia, and ventricular fibrillation [1] [2] [3].

In Vivo, Bethanidine hydriodide (0.1-100 mg/kg; i.v./s.c./p.o.) produces potent, long-lasting adrenergic neuronal blockade in cats, preferentially inhibiting low-frequency sympathetic nerve

Caution: Product has not been fully validated for medical applications. For research use only.

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stimulation, and is accompanied by transient sympathomimetic effects and neuromuscular blockade at high doses^[1]. Bethanidine hydriodide (0.3-100 mg/kg; intravenous/oral administration) induces dose-dependent pressor effects, adrenergic neuron blockade, and enhanced amine responses in dogs, and exhibits good tolerance to high oral doses^[1]. Bethanidine hydriodide (10 mg/kg; subcutaneous injection) transiently slows gastrointestinal transit in fasted rats, and an accelerated transit rate is observed 4 h after administration^[1]. Bethanidine hydriodide reduces motor activity in mice at high doses. When administered intravenously at 12.5 mg/kg, it prolongs pentobarbital-induced hypnotic duration, and exhibits route-dependent toxicity, with an LD50 of 12 mg/kg for intravenous injection and 520 mg/kg for oral administration^[1]. Bethanidine hydriodide (300 mg/kg) increases the ventricular fibrillation threshold by 150% in the hearts of normal dogs and by 327% in the hearts of infarcted dogs, with no acute toxicity observed even at doses as high as 300 mg/kg^[2].

In Vitro, Bethanidine hydriodide (1-3 µg/mL) abolishes the inhibitory effect of neural stimulation on the pendular movement of isolated rabbit ileum^[1]. Bethanidine hydriodide (1-10 µg/mL) attenuates the neurostimulatory contractile response of isolated guinea pig vas deferens at a concentration of 1 µg/mL, and completely abolishes this response at 3 µg/mL^[1]. Bethanidine hydriodide (3-300 µg/mL) inhibits the peristaltic reflex of isolated guinea pig ileum; it reduces cholinergic sensitivity at concentrations of 3 to 30 µg/mL, and decreases the sensitivity to acetylcholine and histamine by 10-fold at a concentration of 300 µg/mL^[1]. Bethanidine hydriodide (100-300 µg/mL) inhibits serotonin-induced contraction of isolated rat uterus and adrenaline-induced contraction of isolated rabbit uterus^[1].

References:

- [1]. BOURA AL, et al. Adrenergic neurone blockade and other acute effects caused by N-benzyl-N'-dimethylguanidine and its ortho-chloro derivative. Br J Pharmacol Chemother. 1963;20(1):36-55.
- [2]. Bacaner MB, et al. Antiarrhythmic, antifibrillatory, and hemodynamic actions of bethanidine sulfate: an orally effective analog of bretylium for suppression of ventricular tachyarrhythmias. Am J Cardiol. 1982;50(4):728-734.
- [3]. Gifford RW. Bethanidine sulfate—a new antihypertensive agent. JAMA. 1965 Sep 13;193(11):901-5.

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