Product Data Sheet

Product Name: Bucladesine calcium salt
Cat. No.: GC35565

Chemical Properties

Cas. No.	938448-87-4		
SMILES	O=C(CCC)O[C@H]1[C@H](N2C(N=CN=C3NC(CCC)=O)=C3N=C2)O[C@@](CO4)([H])[C@@]1([H])OP4([O-])=O.[0.5Ca2+]		
Formula	$C_{18}H_{23}Ca_{0.5}N_5O_8P$	M.Wt	488.42
Solubility	Water: 100 mg/mL (204.74 mM); DMSO: ≥ 100 mg/mL (204.74 mM)	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ 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	Bucladesine calcium salt		

Background

Bucladesine calcium salt (Dibutyryl-cAMP calcium salt; DC2797 calcium salt) is a membrane permeable selective activator of PKA.Target: PKABucladesine (bilateral infusion of 10 mM or 100 mM) leads to a significant reduction in escape latency and travel distance (showing an improvement in spatial memory) compared to the control, as assesed by Morris water maze task in male rats. Bucladesine at 1 mM and 5 mM concentrations infused within minutes after 0.5 mg nicotine infusion improves spatial memory retention in male rats [1]. Bucladesine (10 mM/side) combined with Nicotine (0.5 mM/side) results in a significant increase in the ChAT and VAChT immunoreactivity in CA1 regions, and increase in the optical density and amount of ChAT and VAChT immunostaining correlates with the decrease in escape latency and traveled distance in rats treated with Nicotine and low dose of Bucladesine [2]. Bucladesine is absorbed very rapidly and almost completely when the aqueous solution is applied to the site where the skin has been excised. Bucladesine is absorbed rapidly but slower than in the full-thickness abrasion rat model in the case of stripped skin [3]. Bucladesine (single or

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multiple administration of an emulsion containing 1.5%) is capable of significantly reducing the inflammatory oedema in the arachidonic acid induced ear oedema model in mice [4].

[1]. Sharifzadeh, M., et al., Post-training intrahippocampal infusion of nicotine-bucladesine combination causes a synergistic enhancement effect on spatial memory retention in rats. Eur J Pharmacol, 2007. 562(3): p. 212-20. [2]. Azami, K., et al., The quantitative evaluation of cholinergic markers in spatial memory improvement induced by nicotine-bucladesine combination in rats. Eur J Pharmacol, 2010. 636(1-3): p. 102-7. [3]. Mafune, E., M. Takahashi, and N. Takasugi, Effect of vehicles on percutaneous absorption of bucladesine (dibutyryl cyclic AMP) in normal and damaged rat skin. Biol Pharm Bull, 1995. 18(11): p. 1539-43. [4]. Rundfeldt, C., et al., The stable cyclic adenosine monophosphate analogue, dibutyryl cyclo-adenosine monophosphate (bucladesine), is active in a model of acute skin inflammation. Arch Dermatol Res, 2012.

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