Product Data Sheet

Product Name: Rp-8-bromo-Cyclic GMPS (sodium salt)
Cat. No.: GC10517

Chemical Properties

Cas. No.	208445-06-1		
Chemical Name	8-bromo-guanosine cyclic 3',5'-[(R)-(hydrogen phosphorothioate)], monosodium salt		
SMILES	O[C@H]1[C@H](N2C(Br)=NC3=C2N=C(N)NC3=O)O[C@H]4[C@H]1O[P@@](OC4)([S-])=O.[Na+]		
Formula	$C_{10}H_{10}BrN_5O_6PS \bullet Na$	M.Wt	462.1
Solubility	≤3.6mg/ml in ethanol;12.5mg/ml in DMSO;16.7mg/ml in dimethyl formamide	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			

Background

Rp-8-bromo-Cyclic GMPS is a cGMP-dependent protein kinase (cGK) inhibitor.

cGMP is considered as an important regulator of vascular smooth muscle tone. Several smooth muscle relaxants including nitrogen oxide-containing vasodilators), endothelial-derived relaxing factors, and atrial natriuretic peptides can stimulate cGMP production in vascular smooth muscle. In addition, many of these agents have been shown to inhibit Ca2+-stimulated enzymes such as phosphorylase kinase and myosin light chain kinase in aortic smooth muscle, indicating that one major role of cGMP is to reduce the levels of free intracellular Ca2+.

In vitro: The effects of Rp-8-bromo-Cyclic GMPS on intracellular calcium concentrations in cultured rat aortic smooth muscle cells were studied. Results showed that both angiotensin II and depolarizing concentrations of K+ were ableo to stimulate Ca2+'

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com
Address: 10292 Central Ave. #205, Montclair, CA, USA

accumulation in the cytoplasm. The increase in Ca2+ because of angiotensin II was associated with an increase in inositol phosphates, while that due to K+ was not. Preincubation of cells with Rp-8-bromo-Cyclic GMPS at 100 μM could cause an inhibition of peak Ca2+ accumulation to either angiotensin II or K+ [1]. Another study found that like 8-bromo-cGMP, Rp-8-bromo-Cyclic GMPS was also resistant to hydrolysis by phosphodiesterases. This Rp isomer could bind cGK without activating it, leading to the competitive inhibition [2].

In vivo: Up to now, there is no animal in vivo data reported.

Clinical trial: So far, no clinical study has been conducted.

References:
[1] Rashatwar, S. S.,Cornwell, T.L. and Lincoln, T.M. Effects of 8-bromo-cGMP on Ca2+ levels in vascular smooth muscle cells: Possible regulation of Ca2+-ATPase by cGMP-dependent protein kinase. Proceedings of the National Academy of Sciences of the United States of America 84(16), 5685-5689 (1987).
[2] Butt, E. ,Phler, D.,Genieser, H.G., et al. Inhibition of cyclic GMP-dependent protein kinase-mediated effects by (Rp)-8-bromo-PET-cyclic GMPS. British Journal of Pharmacology 116, 3110-3116 (1995).