

Product Data Sheet

Product Name: 8-BuS-AMP

Cat. No.: GC82061

Chemical Properties

Cas. No. 344402-39-7

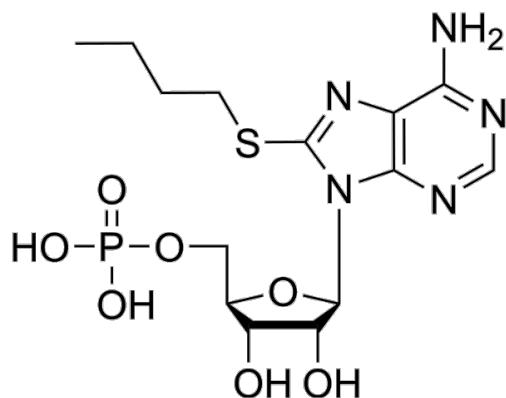
Formula $C_{14}H_{22}N_5O_7PS$ M.Wt 435.39

Solubility H_2O : 50 mg/mL (114.84 mM; Need ultrasonic) Storage Store at $-20^{\circ}C$

General tips For obtaining a higher solubility, please warm the tube at $37^{\circ}C$ and shake it in the ultrasonic bath for a while. Stock solution can be stored below $-20^{\circ}C$ 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

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

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8-BuS-AMP is a NTPDase1 inhibitor and a CD73/CD39 inhibitor, with an IC₅₀ of 35 μ M and a K_i value of 0.292 μ M against human NTPDase1; its K_i values against human CD73 and CD39 are 1.19 μ M and 0.847 μ M, respectively. 8-BuS-AMP binds to the substrate-binding pockets of NTPDase1 and CD73 to effectively block the conversion of ATP and AMP to adenosine, thereby enhancing the activation and proliferation of human peripheral T lymphocytes. 8-BuS-AMP possesses excellent enzymatic hydrolysis resistance and metabolic stability, resists hydrolysis by multiple NTPDase subtypes, and shows no activity against P2Y1 and P2Y12 receptors. 8-BuS-AMP can be used in purinergic signaling pathway and cancer-related studies [1] [2] [3].

In Vivo, 8-BuS-AMP (100 μ M; added to histochemical reaction buffer) specifically inhibits NTPDase1-mediated ATPase activity in mouse liver vascular tissues without affecting NTPDase activity in kidney tubules[2].

In Vitro, 8-BuS-AMP (100 μ M; 10 min) impairs recombinant human NTPDase1's ability to inhibit ADP-induced platelet aggregation, but does not itself induce or inhibit platelet aggregation, indicating in vitro inactivity towards platelet P2Y1 and P2Y12 receptors[2]. 8-BuS-AMP (1 μ M; 0, 20, 40, 60 min) is highly metabolically stable in human and mouse liver microsomes, with half-lives of 462 min and 182 min, respectively[3]. 8-BuS-AMP (1-100 μ M; 1 h) concentration-dependently inhibits nucleotide hydrolysis in human synovial fluid, reducing adenosine formation from both ϵ -ATP and ϵ -AMP[3]. 8-BuS-AMP (10-100 μ M; 3 days, added daily) concentration-dependently enhances activation (via increased CD25 expression) and proliferation of human primary CD4⁺ and CD8⁺ T lymphocytes without reducing cell viability[3].

References:

- [1]. Baqi Y, et al. Development of Anthraquinone Derivatives as Ectonucleoside Triphosphate Diphosphohydrolase (NTPDase) Inhibitors With Selectivity for NTPDase2 and NTPDase3. Front Pharmacol. 2020;11:1282. Published 2020 Aug 27.
- [2]. Lecka J, et al. 8-BuS-ATP derivatives as specific NTPDase1 inhibitors. Br J Pharmacol. 2013;169(1):179-196.
- [3]. Bi C, et al. Synthesis, Characterization, Interactions, and Immunomodulatory Function of Ectonucleotidase CD39/CD73 Inhibitor 8-Butylthioadenosine 5'-Monophosphate. ACS Pharmacol Transl Sci. 2025;8(5):1401-1415. Published 2025 Apr 3.

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