

PRODUCT INFORMATION

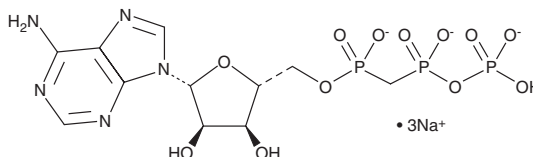


α,β -Methyleneadenosine 5'-triphosphate (sodium salt)

Item No. 10008956

CAS Registry No.: 1343364-54-4
Formal Name: 5'-[hydrogen P-[[hydroxy (phosphonoxy)phosphinyl] methyl]phosphonate] adenosine, trisodium salt

Synonym: $\alpha\beta$ -methylene ATP
MF: $C_{11}H_{15}N_5O_{12}P_3 \cdot 3Na$
FW: 571.2
Purity: $\geq 95\%$
UV/Vis.: λ_{max} : 259 nm
Supplied as: A crystalline solid
Storage: $-20^\circ C$
Stability: ≥ 4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

α,β -Methyleneadenosine 5'-triphosphate ($\alpha\beta$ -methylene ATP) (sodium salt) is supplied as a crystalline solid. Aqueous solutions of $\alpha\beta$ -methylene ATP (sodium salt) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of $\alpha\beta$ -methylene ATP (sodium salt) in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

$\alpha\beta$ -methylene ATP is a phosphonic analog of ATP that is characterized by the replacement of the bridging oxygen atom between the α - and β -phosphate groups with methylene. It is an agonist of P2X purinoceptors P2X₁ and P2X₃ ($EC_{50} = \sim 1 \mu M$) and is $\sim 1,000$ -fold less potent at P2X₂, P2X receptors 4-7, and P2Y receptors.¹⁻⁴ Persistent activation of purinoceptors results in desensitization, resulting in an antagonist-like effect of $\alpha\beta$ -methylene ATP.⁵ $\alpha\beta$ -methylene ATP is used as a stable analog of ATP to study the interaction of ATP with kinases and other proteins.^{6,7} It weakly binds and inhibits adenylate cyclase in a calcium-dependent manner ($K_i = \sim 0.5 \text{ mM}$).^{8,9}

References

1. North, R.A. *Physiol. Rev.* **82**(4), 1013-1067 (2002).
2. Coddou, C., Yan, Z., Obsil, T., et al. *Pharmacol. Rev.* **63**(3), 641-683 (2011).
3. Helms, N., Kowalski, M., Illes, P., et al. *PLoS One* **8**(11), 1-11 (2013).
4. Abbracchio, M.P., Burnstock, G., Boeynaems, J.-M., et al. *Pharmacol. Rev.* **58**(3), 281-341 (2006).
5. Dunn, P.M. *Curr. Biol.* **10**(8), R305-R307 (2000).
6. Gibson, K.J., Schubert, K.R., and Switzer, R.L. *J. Biol. Chem.* **257**(5), 2391-2396 (1982).
7. Steegborn, C., Litvin, T.N., Levin, L.R., et al. *Nat. Struct. Mol. Biol.* **12**(1), 32-37 (2005).
8. Krug, F., Parikh, I., Illiano, G., et al. *J. Biol. Chem.* **248**(4), 1203-1206 (1973).
9. Dessauer, C.W., Scully, T.T., and Gilman, A.G. *J. Biol. Chem.* **272**(35), 22272-22277 (1997).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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