

PRODUCT INFORMATION



N⁶-Benzyladenosine-5'-O-diphosphate (sodium salt)

Item No. 38370

Formal Name: ((2R,3S,4R,5R)-5-(6-(benzylamino)-9H-purin-9-yl)-3,4-dihydroxytetrahydrofuran-2-yl)methyl diphosphate, trisodium salt

Synonym: N⁶-benzyl ADP
MF: C₁₇H₁₈N₅O₁₀P₂ • 3Na

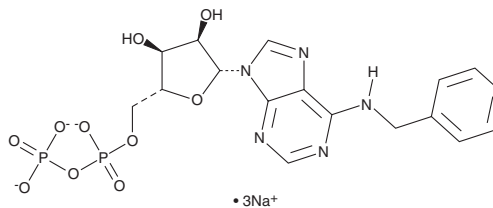
FW: 583.3

Purity: ≥95%

Supplied as: A solution in water

Storage: -80°C

Stability: ≥2 years



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

Description

N⁶-Benzyladenosine-5'-O-diphosphate is a derivative of ADP (Item Nos. 16778 | 21121) and an active metabolite of the cytokinin N⁶-benzyladenine (Item No. 21711).¹⁻³ It inhibits the ATPase activities of mortalin, heat shock protein 70 (Hsp70), and heat shock cognate 71 kDa protein (Hsc70; apparent K_s = 86.51, 294.5, and 1,612 μM, respectively, for the human enzymes).² N⁶-Benzyladenosine-5'-O-diphosphate inhibits the proliferation of CEM, HL-60, and K562 leukemia, RPMI-8226 multiple myeloma, and MCF-7 breast cancer cells (IC₅₀s = 2, 1.3, 4, 4.5, and 8 μM, respectively).³ It has also been used in the synthesis of radiolabeled and unlabeled forms of N⁶-benzyladenosine 5'-(γ-thio)-triphosphate (N⁶-benzyl-ATPyS), which have been used to determine kinase activity.^{4,5}

References

1. Auer, C.A., Cohen, J.D., Laloue, M., *et al.* Comparison of benzyl adenine metabolism in two *Petunia hybrida* Lines differing in shoot organogenesis. *Plant Physiol.* **98(3)**, 1035-1041 (1992).
2. Moseng, M.A., Nix, J.C., and Page, R.C. 2- and N6-functionalized adenosine-5'-diphosphate analogs for the inhibition of mortalin. *FEBS Lett.* **593(15)**, 2030-2039 (2019).
3. Voller, J., Zatloukal, M., Lenobel, R., *et al.* Anticancer activity of natural cytokinins: A structure-activity relationship study. *Phytochemistry* **71(11-12)**, 1350-1359 (2010).
4. Dephoure, N., Howson, R.W., Blethrow, J.D., *et al.* Combining chemical genetics and proteomics to identify protein kinase substrates. *Proc. Natl. Acad. Sci. USA* **102(50)**, 17940-17945 (2005).
5. Allen, J.J., Li, M., Brinkworth, C.S., *et al.* A semisynthetic epitope for kinase substrates. *Nat. Methods* **4(6)**, 511-516 (2007).

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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