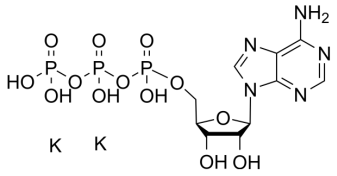
ATP dipotassium

Cat. No.:	HY-B2176C
CAS No.:	42373-41-1
Molecular Formula:	$C_{10}H_{16}K_2N_5O_{13}P_3$
Molecular Weight:	585.38
Target:	Endogenous Metabolite
Pathway:	Metabolic Enzyme/Protease
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	ATP dipotassium (Adenosine 5'-triphosphate dipotassium) is a central component of energy storage and metabolism in vivo. ATP dipotassium provides the metabolic energy to drive metabolic pumps and serves as a coenzyme in cells. ATP dipotassium is an important endogenous signaling molecule in immunity and inflammation[1][2].
IC_{50} & Target	Human Endogenous Metabolite
In Vitro	ATP dipotassium (5 mM; 1 hour) co-treatment with LPS (1 μg/mL) has a synergistic effect on the activation of the NLRP3 inflammasome in HGFs[3]. ATP dipotassium (2 mM; 0.5-24 hours) induces secretion of IL-1β, KC and MIP-2 from BMDMs in a caspase-1 activation-dependent manner[4]. ATP dipotassium promotes neutrophil chemotaxis in vitro[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	ATP dipotassium (50 mg/kg; i.p.) protects mice against bacterial infection in vivo[4]. ATP dipotassium induces the secretion of IL-1β, KC and MIP-2 and neutrophils recruitment in vivo[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Four-week-old Kunming mice (18-22 g)[4]
Dosage:	50 mg/kg
Administration:	Intraperitoneal injection, before bacterial (E. coli) challenge
Result:	Protected mice from bacterial infection.

CUSTOMER VALIDATION

- Mol Cell. 2022 Apr 14:S1097-2765(22)00290-8.
- Cell Death Differ. 2021 Sep 11.
- Biosens Bioelectron. 2021 Apr 15;178:113025.

- Protein Cell. 2021 Oct 22;1-21.
- Crit Care. 2021 Oct 12;25(1):356.

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REFERENCES

[1]. Bonora M, et al. ATP synthesis and storage. Purinergic Signal. 2012 Sep;8(3):343-57.

[2]. M J L Bours, et al. Adenosine 5'-triphosphate and adenosine as endogenous signaling molecules in immunity and inflammation. Pharmacol Ther. 2006 Nov;112(2):358-404.

[3]. Shuo Xu, et al. Doxycycline inhibits NAcht Leucine-rich repeat Protein 3 inflammasome activation and interleukin-1β production induced by Porphyromonas gingivalis-lipopolysaccharide and adenosine triphosphate in human gingival fibroblasts. Arch Oral Biol. 2019 Nov;107:104514.

[4]. Yang Xiang, et al. Adenosine-5'-Triphosphate (ATP) Protects Mice against Bacterial Infection by Activation of the NLRP3 Inflammasome. PLoS One. 2013; 8(5): e63759.

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