

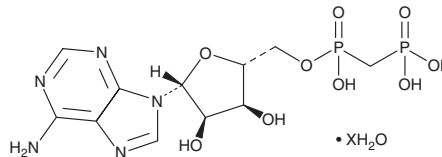
# PRODUCT INFORMATION



## Adenosine 5'-methylenediphosphate (hydrate)

Item No. 34504

**Formal Name:** adenosine, 5'-[hydrogen P-(phosphonomethyl)phosphonate], hydrate  
**Synonyms:** Adenosine 5'-( $\alpha,\beta$ -methylene)diphosphate, AMP-CP, APCP, 5'-APCP  
**MF:**  $C_{11}H_{17}N_5O_9P_2 \cdot xH_2O$   
**FW:** 425.2  
**Purity:**  $\geq 98\%$   
**Supplied as:** A solid  
**Storage:**  $-20^\circ C$   
**Stability:**  $\geq 4$  years



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

### Laboratory Procedures

Adenosine 5'-methylenediphosphate (hydrate) is supplied as a solid. A stock solution may be made by dissolving the adenosine 5'-methylenediphosphate (hydrate) in water. The solubility of adenosine 5'-methylenediphosphate (hydrate) in water is approximately 50 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

Adenosine 5'-methylenediphosphate is an inhibitor of ecto-5'-nucleotidase, also known as CD73, with a  $K_i$  value of 37 nM.<sup>1</sup> It inhibits cAMP accumulation induced by adenosine 5'-monophosphate (AMP; Item No. 21094), adenosine 5'-diphosphate (ADP; Item Nos. 16778 | 21121), or adenosine 5'-triphosphate (ATP; Item No. 14498) but not adenosine (Item No. 21232) in VA-13 human fibroblasts when used at a concentration of 100  $\mu M$ . Adenosine 5'-methylenediphosphate reduces proliferation of U138MG glioma cells, as well as inhibits the invasion and migration of MHCC97H hepatocellular carcinoma (HCC) cells in a migration assay.<sup>2,3</sup> It increases tumor infiltration of CD3<sup>+</sup>CD8<sup>+</sup> T cells and reduces tumor growth in a K1735 murine melanoma model when administered at a dose of 400  $\mu g$ /mouse.<sup>4</sup>

### References

1. Bruns, R.F. Adenosine receptor activation by adenine nucleotides requires conversion of the nucleotides to adenosine. *Naunyn Schmiedebergs Arch. Pharmacol.* **315(1)**, 5-13 (1980).
2. Braganhol, E., Tamajusuku, A.S.K., Bernardi, A., et al. Ecto-5'-nucleotidase/CD73 inhibition by quercetin in the human U138MG glioma cell line. *Biochim. Biophys. Acta* **1770(9)**, 1352-1359 (2007).
3. Shali, S., Yu, J., Zhang, X., et al. Ecto-5'-nucleotidase (CD73) is a potential target of hepatocellular carcinoma. *J. Cell Physiol.* **234(7)**, 10248-10259 (2018).
4. Forte, G., Sorrentino, R., Montinaro, A., et al. Inhibition of CD73 improves B cell-mediated anti-tumor immunity in a mouse model of melanoma. *J. Immunol.* **189(5)**, 2226-2233 (2021).

#### 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.

#### WARRANTY AND LIMITATION OF REMEDY

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