

## Product Information

### Inosine Monophosphate Dehydrogenase Type II, human, recombinant expressed in *E. coli*

Catalog Number **I1782**  
Storage Temperature  $-70\text{ }^{\circ}\text{C}$

E.C. 1.1.1.205  
Synonyms: IMPDH II; IMP Dehydrogenase Type II;  
IMP:NAD oxidoreductase

#### Product Description

Inosine Monophosphate Dehydrogenase Type II is a human, recombinant protein expressed in *E. coli* with an apparent molecular mass of ~55 kDa.

Inosine monophosphate dehydrogenase (IMPDH) is the rate-limiting enzyme in *de novo* guanine nucleotide biosynthesis. It converts inosine 5'-monophosphate to xanthine 5'-monophosphate using NAD as a cofactor. IMPDH has been shown to play a significant role in the growth and malignancy of some tumors as guanine nucleotide "pools" speed DNA synthesis in cells. In addition, guanine nucleotide is known to be a necessary component of lymphocyte proliferation. Type II is the predominant IMPDH isoform and is specifically linked to a wide range of cancers and lymphocyte proliferation.

Specific Activity:  $\geq 0.05$  unit/mg protein

Unit Definition: One unit will produce 1.0  $\mu\text{mole}$  of XMP from IMP with corresponding reduction of  $\beta\text{-NAD}$  per minute at pH 8.0 at  $25\text{ }^{\circ}\text{C}$ .

The product is supplied in a solution containing 20 mM Tris-HCl, pH 8.0, with 0.5 mM EDTA and 1 mM DTT.

#### Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

#### Storage/Stability

The product ships on dry ice and it is recommended to store the product at  $-70\text{ }^{\circ}\text{C}$ . Avoid repeated freeze-thaw cycles.

#### References

1. Barnes, B.J. et al., Mechanism of action of the antitumor agents 6-Benzoyl-3,3-disubstituted-1,5-diazabicyclo[3.1.0]hexane-2,4-diones: potent inhibitors of human type II inosine 5'-monophosphate dehydrogenase. *Int. J. Cancer*, **94**(2), 275-281 (2001).
2. Barnes, B.J. et al., Analysis of the *in vitro* inhibition of murine and human tumor cell growth by pyrazol derivatives on a substituted azabicyclo [3.1.0] hexane-2,4-dione. *Anticancer Res.*, **21**(4A), 2313-2321 (2001).
3. Zhou, X. et al., Expression, purification, and characterization of inosine 5'-monophosphate dehydrogenase from *Borrelia burgdorferi*. *J. Biol. Chem.*, **272**(35), 21977-21981 (1997).

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