

PRECICE[®] Services Information sheet Ref: # E-Nov 2

PNP

32.1

PNP - Purine Nucleoside Phosphorylase

Human, recombinant expressed in E. coli E.C. 2.4.2.1

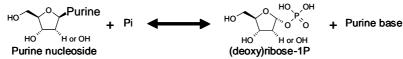
Description

Metabolic function

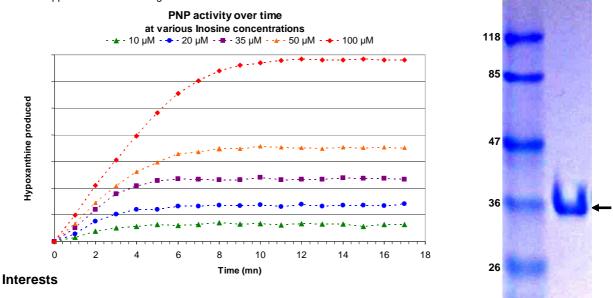
Purine Nucleoside Phosphorylase (PNP) is involved in salvage pathway of the purine metabolism.

Catalytic activity

PNP catalyzes the cleavage of the glycosidic bond of ribo- or deoxyribonucleosides, in the presence of inorganic phosphate as a second substrate, to generate the purine base and ribose- or deoxyribose-1-phosphate. The reaction is reversible for natural substrates:



NOVOCIB'S PNP is a human recombinant Purine Nucleoside Phosphorylase expressed in E. coli. kDa It has an apparent molecular weight of 32.12 kDa.



PNP inhibition

Several PNP inhibitors have been developed to treat cancer, viral infection and auto-immune (see sheet # IVS-Nov2, "PNP Inhibition - In vitro Screening Assay" for further details) diseases.

PNP, a threat for therapeutic efficacy of Nucleoside Analogues

PNP's activity in vivo can be responsible for the cleavage and the subsequent deactivation of Nucleoside Analogues, thus unable to be phosphorylated by nucleoside kinases. The resistance to cleavage by PNP is worth being investigated to increase the therapeutic efficacy of Nucleoside Analogues. (see sheet # NCR-Nov2, "PNP Cleavage activity - Nucleoside Resistance Assay" for further details)

PNP, a tool for enzymatic synthesis of Nucleoside Analogues

PNP can be exploited for the reversible reaction that it catalyzes to synthesize nucleoside analogues, for instance with potential antiviral and antineoplastic activities, especially when chemical synthesis is difficult to prepare and / or gives low yields. (coming soon, "Transribosylation by PNP" for further details)

PNP Services

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NOVOCIB has cloned and purified a human recombinant Purine Nucleoside (PNP) Phosphorylase and has developed a range of related PRECICE[®] services.

PNP Inhibition - In Vitro Screening Assay PNP Cleavage activity - Nucleoside Resistance Assay

(PNP enzyme can also be used for transribosylation)