abcam

Product datasheet

Purine Nucleoside Phosphorylase Activity Assay Kit (Fluorometric) ab204706

3 Images

Overview

Product name	Purine Nucleoside Phosphorylase Activity Assay Kit (Fluorometric)
Detection method	Fluorescent
Sample type	Cell Lysate, Purified protein, Tissue Lysate
Assay type	Enzyme activity
Sensitivity	0.005 µU
Species reactivity	**Reacts with:** Other species, Mammals
Product overview	Purine Nucleoside Phosphorylase Activity Assay Kit (Fluorometric) (ab204706) is an assay where hypoxanthine formed from the breakdown of inosine is detected via a multi-step reaction, resulting in the generation of an intermediate that reacts with the PNP Probe. The fluorescent product is measured at Ex/Em = 535/587 nm. Limit of quantification is 0.005 µU recombinant Purine Nucleoside Phosphorylase.
Notes	Purine Nucleoside Phosphorylase (PNP, E.C. 2.4.2.1.) is an enzyme involved in purine metabolism and it 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-1-phosphate or deoxyribose-1-phosphate. It is one of the enzymes of the nucleotide salvage pathways that allows the cell to produce nucleotide monophosphates when the de novo synthesis pathway has been interrupted or is non-existent (as is the case in the brain). PNP is a cytosolic enzyme. PNP deficiency disease leads to toxic buildup of deoxyguanosine in T-cells leading to T-lymphocytopenia with no apparent effects on B-lymphocyte function. Inhibition of PNP is an important target for chemotherapeutic applications and treatment of T- cell mediated autoimmune diseases. PNP deficiency is also associated with neurological problems.
Platform	Microplate reader

Properties

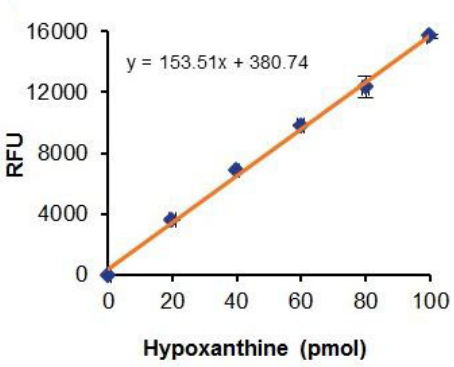
Storage instructions	Store at -20°C. Please refer to protocols.

Components	**100 tests**
Enzyme Mix	1 vial
Hypoxanthine Standard (10 mM)	1 x 100µl

Components	100 tests
Inosine Substrate	1 x 200µl
PNP Assay Buffer (10x)	1 x 10ml
PNP Positive Control	1 vial
PNP Probe (in dry DMSO)	1 x 200µl

Involvement in disease	Defects in PNP are the cause of purine nucleoside phosphorylase deficiency (PNP deficiency) [MIM:613179]. It leads to a severe T-cell immunodeficiency with neurologic disorder in children.
Sequence similarities	Belongs to the PNP/MTAP phosphorylase family.
Cellular localization	Cytoplasm > cytoskeleton.

Images



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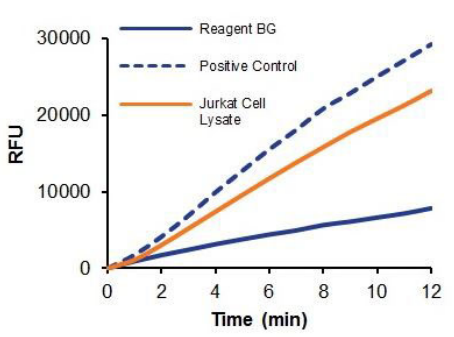
Typical Hypoxanthine Standard calibration curve.



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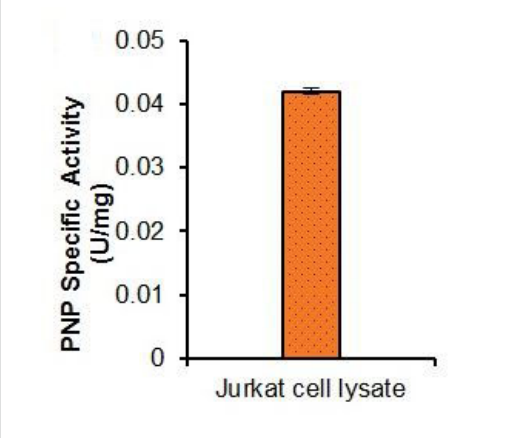
Purine Nucleoside Phosphorylase Activity in Jurkat Cell (T-lymphocyte) lysate (315 ng) and Positive Control; BG: Background.



PNP specific activity in Jurkat Cell lysate.

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