

Pyrophosphate Assay Kit (Colorimetric / Fluorometric) ab234040

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Overview

Product name	Pyrophosphate Assay Kit (Colorimetric / Fluorometric)
Detection method	Colorimetric/Fluorometric
Sample type	Serum, Plasma, Cell culture extracts, Other biological fluids, Tissue Lysate
Assay type	Quantitative
Product overview	The kit provides sufficient reagents for 100 fluorometric or 50 colorimetric assays, respectively.

Pyrophosphate Assay Kit (Colorimetric / Fluorometric) (ab234040) provides a fast, convenient and ultrasensitive method for determination of free inorganic pyrophosphate (PPi) levels in biological material. PPi produced during biotic processes is detected through a series of reactions which utilize a proprietary enzyme mix and probe, generating a stable product that can be quantified by either colorimetric or fluorometric readout. Generated fluorescence (Ex/Em = 535/587 nm) or color (OD: 570 nm) intensities are directly proportional to the concentrations of pyrophosphate, enabling precise measurements. Monomeric inorganic phosphate (Pi) does not interfere with the assay. This kit delivers an easy and robust method suitable for use in a variety of biological samples and can be performed in a convenient microtiter-plate format. The kit provides sufficient reagents for 100 fluorometric or 50 colorimetric assays, respectively. This kit can detect as low as 1.8 μM PPi in plasma and serum samples.

Inorganic pyrophosphate (diphosphate, pyrophosphoric acid or PPi) is a small molecule formed during, or required as a substrate for, a number of biochemical reactions. Enzymatic reactions that generate PPi include ATP hydrolysis, DNA and RNA polymerization, cyclic AMP formation, and enzymatic activation of fatty acids to form their CoA esters. Conversely, enzymes that utilize PPi may include cyclases, hydrolases and ligases. Measurement of inorganic pyrophosphate (PPi) in plasma, serum and other biologic fluids is important in studies of bone metabolism, renal stone disease, and certain types of arthritis.

Notes This product is manufactured by BioVision, an Abcam company and was previously called K568 Pyrophosphate (PPi) Assay Kit (Fluorometric/Colorimetric). K568-100 is the same size as the 100 test size of ab234040.

Platform Microplate reader

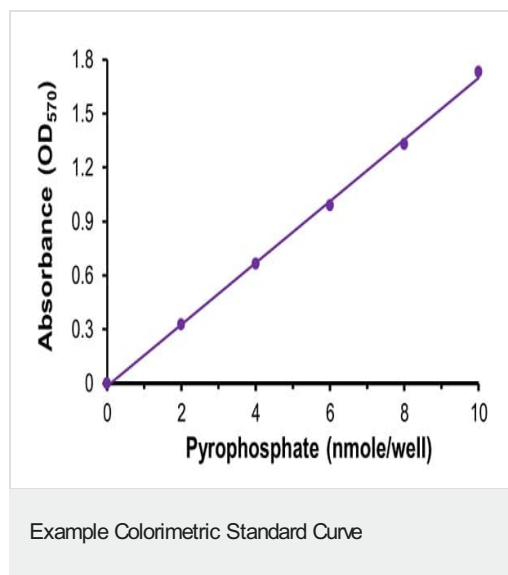
Properties

Storage instructions

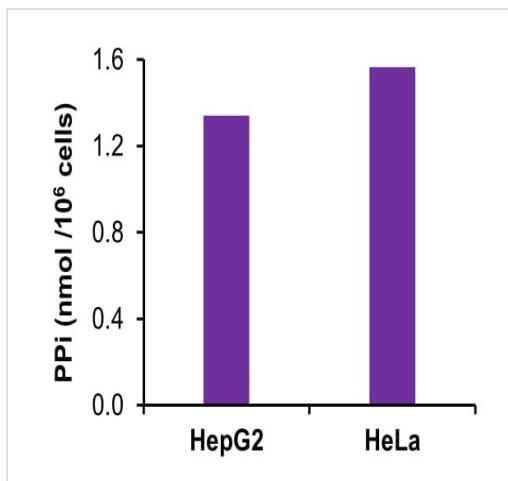
Store at -20°C. Please refer to protocols.

Components	100 tests
AMP	1 x 200µl
Assay Buffer XV	1 x 25ml
Development Enzyme Mix I	1 vial
Enzyme Mix X	1 x 200µl
OxiRed Probe	1 x 200µl
PEP	2 vials
Pyrophosphate Standard	1 x 200µl

Images

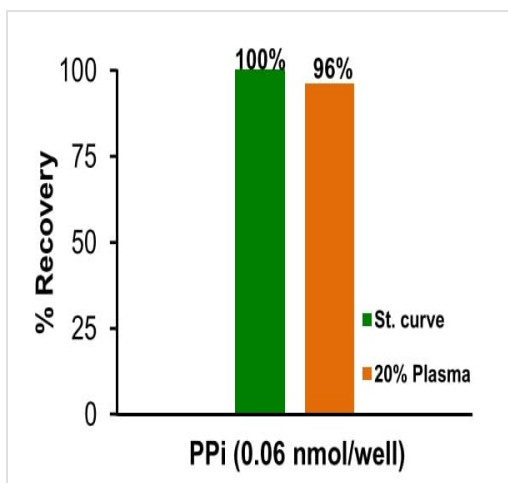


Cells were extracted directly in the Assay Buffer.

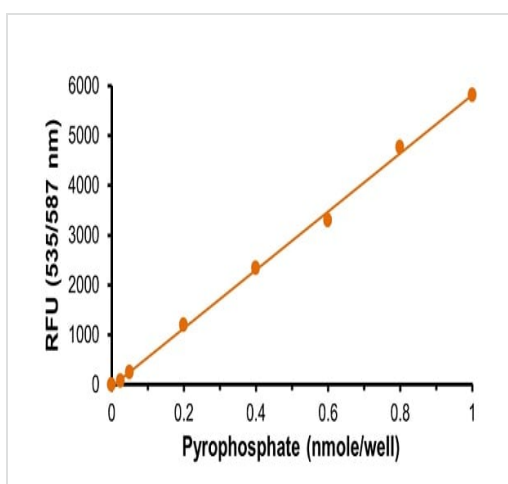


Pyrophosphate measured in HepG2 and HeLa cell lysates.

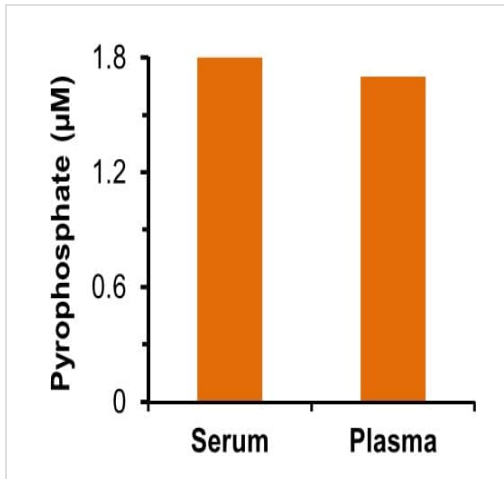
Spike and recovery in 20 μ L of normal human plasma. Plasma samples were spiked with 0.06 nmol of PPi Standard and assayed according to kit protocol yielding 96% PPi recovery.



Spike and recovery in normal human plasma.



Example Fluorometric Standard Curve



Quantification of pyrophosphate in 20 µL of de-proteinized undiluted human serum and pooled plasma.

Quantification of pyrophosphate in de-proteinized undiluted human serum and pooled plasma.

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