

Pyrophosphate Assay Kit

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CATALOG #
AAA44689

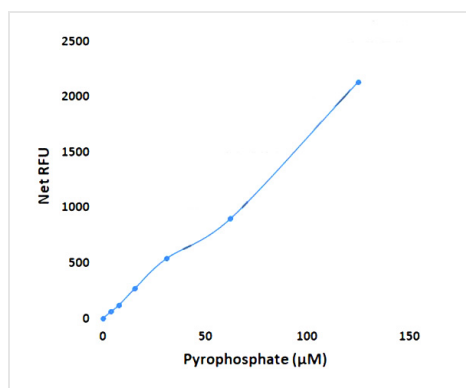
PRODUCT SYNONYMS

Pyrophosphate; Pyrophosphate Assay Kit; Pyrophosphate assay kit

PRODUCT SPECIFICATIONS

Detection Method	Fluorometric
Preparation and Storage	Upon receipt, store PPDK at -80°C and the rest of the components at -20°C. The Fluorometric Probe is light sensitive and must be stored accordingly. Avoid multiple freeze/thaw cycles.

IMAGES



Standard Curve (Sample)

ADDITIONAL INFORMATION

Related Product Information for Pyrophosphate assay kit	Background: Pyrophosphate, also called diphosphate, is any phosphorus oxyanion that contains two phosphorus atoms in a P-O-P linkage. Pyrophosphates are found in important biochemical molecules such as adenosine triphosphate (ATP) and other nucleotide triphosphates. Pyrophosphate is formed when ATP is hydrolyzed to adenosine monophosphate in various biologically important reactions. As an example, when a deoxynucleotide triphosphate (dNTP) or a nucleotide triphosphate (NTP) is used by a DNA polymerase or RNA polymerase to incorporate a nucleotide into a DNA or RNA strand respectively, pyrophosphate is formed. Pyrophosphate complexes readily with transition metals such as calcium, and can be found at sufficiently high enough levels in urine, synovial fluid, and blood plasma to block the accumulation of calcium salts. Non enzymatic membrane pyrophosphate channels such as ankylosis gene product (ANK) may move intracellular pyrophosphate into the extracellular synovial fluid. Over formation of calcium pyrophosphate can crystalize and deposit in joints leading to a form of arthritis in humans. The Pyrophosphate Assay Kit is a simple fluorometric assay that measures the amount of pyrophosphate present in biological samples in a 96-well microtiter plate format. Each kit provides sufficient reagents to perform up to 100 assays*, including blanks, pyrophosphate standards, and unknown samples. Sample pyrophosphate concentrations are determined by comparison with a known pyrophosphate standard. The kit has a detection sensitivity limit of 4 uM pyrophosphate. Principle of the Assay: The Pyrophosphate Assay Kit measures total pyrophosphate within biological samples. Pyrophosphate (and phosphoenolpyruvate) is converted by PPDK to pyruvate + adenosine triphosphate (ATP) and phosphate. Pyruvate is converted by pyruvate oxidase in the presence of phosphate and oxygen into acetyl phosphate, carbon dioxide, and hydrogen peroxide. The resulting hydrogen peroxide is then detected with a highly specific fluorometric probe. Horseradish peroxidase catalyzes the reaction between the probe and hydrogen peroxide, which bind in a 1:1 ratio. Samples are compared to a known concentration of pyrophosphate standard within the 96-well microtiter plate format. Samples and standards are incubated for 30 minutes and then read with a standard 96-well fluorometric plate reader (Figure 1).
Product Categories/Family for Pyrophosphate assay kit	Metabolism Research; Carbohydrate Metabolism; Pyrophosphate Assay Kit

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

AAA Biotech | Tel: +1 (619) 604-9440 | Fax: +1 (619) 604-9441 | contact@aaabiotech.com
Online datasheet: <https://stage.aaabiotech.com/assay-kits/pyrophosphate/44689>