abcam

Product datasheet

Paraoxonase 1 Activity Assay Kit ab241044

3 Images

Overview

Product name	Paraoxonase 1 Activity Assay Kit
Detection method	Fluorescent
Sample type	Serum, Plasma
Product overview	Paraoxonase 1 Activity Assay Kit (ab241044) enables rapid measurement of Paraoxonase 1 (PON1) activity, utilizing a fluorogenic substrate that is converted into a highly fluorescent product (Ex/Em = 368/460 nm). This ensures dramatically greater sensitivity than UV or colorimetric assays and eliminates the need for dangerous toxic substrates. A selective PON1 inhibitor is provided for verification of PON1 specific activity. The assay is simple to perform, high-throughput adaptable and can detect a minimum of 2.0 µU paraoxonase activity with a sample volume of 5 µL.
Platform	Microplate reader

Properties

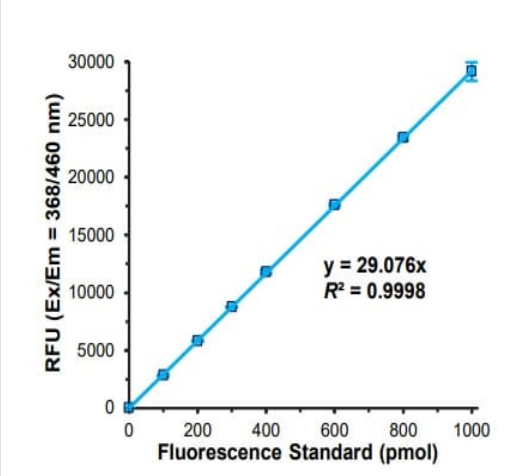
Storage instructions	Store at -20°C. Please refer to protocols.

Components	100 tests
Fluorescence Standard	1 vial
Paraoxonase Assay Buffer	1 x 50ml
Paraoxonase Positive Control	1 vial
PON1 Inhibitor (2-hydroxyquinoline)	1 vial
PON1 Substrate	1 vial

Function	Hydrolyzes the toxic metabolites of a variety of organophosphorus insecticides. Capable of hydrolyzing a broad spectrum of organophosphate substrates and lactones, and a number of aromatic carboxylic acid esters. Mediates an enzymatic protection of low density lipoproteins against oxidative modification and the consequent series of events leading to atheroma formation.
Tissue specificity	Plasma, associated with HDL (at protein level). Expressed in liver, but not in heart, brain,

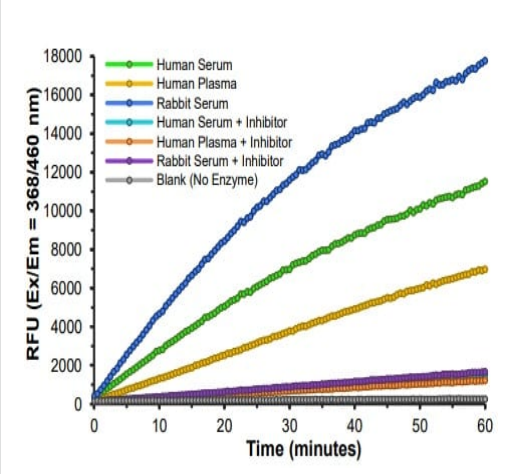
	placenta, lung, skeletal muscle, kidney or pancreas.
Involvement in disease	Genetic variation in PON1 is associated with susceptibility to microvascular complications of diabetes type 5 (MVCD5) [MIM:612633]. These are pathological conditions that develop in numerous tissues and organs as a consequence of diabetes mellitus. They include diabetic retinopathy, diabetic nephropathy leading to end-stage renal disease, and diabetic neuropathy. Diabetic retinopathy remains the major cause of new-onset blindness among diabetic adults. It is characterized by vascular permeability and increased tissue ischemia and angiogenesis. Note=Homozygosity for the Leu-54 allele is strongly associated with the development of retinal disease in diabetic patients.
Sequence similarities	Belongs to the paraoxonase family.
Post-translational modifications	Glycosylated. The signal sequence is not cleaved. Present in two forms, form B contains a disulfide bond, form A does not.
Cellular localization	Secreted > extracellular space.

Images



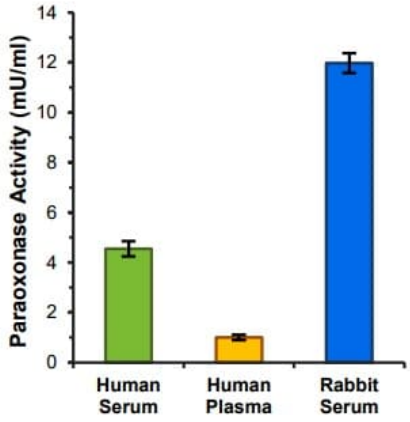
Standard curve of PON1.

Standard curve of PON1 Substrate metabolite fluorescence. One mole of fluorescence standard corresponds to the metabolism of one mole of PON1 Substrate.



Reaction kinetics of PON1 Substrate metabolism.

Reaction kinetics of PON1 Substrate metabolism in donor-pooled human serum (5 µL), donor-pooled human plasma (5 µL) and rabbit serum (2.5 µL) in the presence and absence of 200 µM of the selective PON1 inhibitor 2- hydroxyquinoline (no inhibitor conditions contained 0.4% DMSO as a solvent control).



Quantification of PON1 activity in serum/plasma samples.

Quantification of PON1 activity in serum/plasma samples (mean ± SEM of four independent replicates). Assays were performed according to the kit protocol.

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