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Certificate of Analysis and Data Sheet

Recombinant Human Secreted Phospholipase A2-IIA

Catalog No.	**Source**
228-11268	*Escherichia Coli*

Synonyms

MOM1, PLA2, PLA2B, PLA2L, PLA2S, PLAS1, sPLA2, Phospholipase A2 membrane associated, EC 3.1.1.4, Phosphatidylcholine 2-acylhydrolase, Group IIA phospholipase A2, GIIC sPLA2, Non-pancreatic secretory phospholipase A2, NPS-PLA2, sPLA2-IIA, PLA2G2A.

Introduction

Phospholipase A2 (PLA2) catalyzes the hydrolysis of the sn-2 position of membrane glycerophospholipids to liberate arachidonic acid (AA), a precursor of eicosanoids including prostaglandins and leukotrienes. The same reaction also produces lysophosholipids, which represent another class of lipid mediators.
The secretory PLA2 (sPLA2) family, in which 10 isozymes have been identified, consists of low molecular weight, Ca2+-requiring secretory enzymes that have been implicated in a number of biological processes, such as modification of eicosanoid generation, inflammation, and host defense. This enzyme has been proposed to hydrolyze phosphatidylcholine (PC) in lipoproteins to liberate lyso-PC and free fatty acids in the arterial wall, thereby facilitating the accumulation of bioactive lipids and modified lipoproteins in atherosclerotic foci.
In mice, sPLA2 expression significantly influences HDL particle size and composition and demonstrate that an induction of sPLA2 is required for the decrease in plasma HDL cholesterol in response to inflammatory stimuli. Instillation of bacteria into the bronchi was associated with surfactant degradation and a decrease in large:small ratio of surfactant aggregates in rats.
sPLA2-IIA can exert beneficial action in the context of infectious diseases since recent studies have shown that this enzyme exhibits potent bactericidal effects. Induction of the synthesis of sPLA2-IIA is generally initiated by endotoxin and a limited number of cytokines via paracrine and/or autocrine processes.

Description

Secreted Phospholipase A2-IIA Human Recombinant is manufactured with N-terminal fusion of HisTag. PLA2G2A His-Tagged Fusion Protein is 15.8 kDa containing 124 amino acid residues of the human secreted phospholipase A2-IIA and 16 additional amino acid residues – HisTag.

MRGSHHHHHH GMASHMNLVN FHRMIKLTTG KEAALSYGFY GCHCGVGGRG
SPKDATDRCC VTHDCCYKRL EKRGCGTKFL SYKFSNSGSR ITCAKQDSCR
SQLCECDKAA ATCFARNKTT YNKKYQYYSN KHCRGSTPRC.

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Physical Appearance
Sterile Filtered lyophilized (freeze-dried) powder.

Formulation
Lyophilized from 0.5 mg/ml in 0.05M Acetate buffer pH-4.

Stability
Store lyophilized protein at -20°C. Aliquot the product after reconstitution to avoid repeated freezing/thawing cycles. Reconstituted protein can be stored at 4°C for a limited period of time; it does not show any change after two weeks at 4°C.
The lyophilized protein remains stable until the expiry date when stored at -20°C.

Solubility
Add 0.2 ml of 0.1M Acetate buffer pH-4 and let the lyophilized pellet dissolve completely. For conversion into higher pH value, we recommend intensive dilution by relevant buffer to a concentration of 10 µg/ml. In higher concentrations the solubility of this antigen is limited.

Specificity
The amino acid sequence of the PLA2G2A is 100% homologous to the amino acid sequence of the human Secreted Phospholipase A2-IIA.

Purification Method
Three-step procedure using affinity Ni-NTA chromatography and size exclusion chromatography before and after refolding.

Applications
Western blotting.