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Produktinformation



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PRODUCT INFORMATION



sPLA₂ (human, recombinant Type IID) Item No. 37141

Overview and Properties

Synonyms: GIID sPLA₂, Group IID Secretory Phospholipase A₂, Phosphatidylcholine 2-Acylhydrolase 2D, Phospholipase A₂ Group IID, PLA₂G2D, PLA₂IID, sPLA₂-IID, Secretory Phospholipase A₂ (Group IID), Secretory-type PLA, Stroma-associated Homolog, SPLASH

Source: Active recombinant human N-terminal His-tagged sPLA₂ (Type IID) expressed in *E. coli*

Amino Acids: 21-145

Uniprot No.: Q9UNK4

Molecular Weight: 16.7 kDa

Storage: -80°C (as supplied)

Stability: ≥6 months

Purity: **batch specific** (≥85% estimated by SDS-PAGE)

Supplied in: 50 mM Tris, pH 8.0, 100 mM sodium chloride, 20 mM calcium chloride, 0.05% Triton X-100, and 10% glycerol

Protein

Concentration: **batch specific** mg/ml

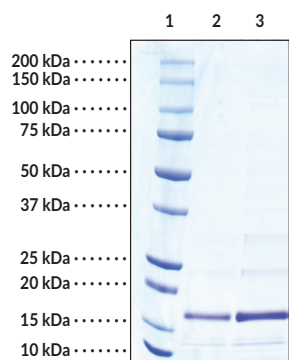
Activity: **batch specific** U/ml

Specific Activity: **batch specific** U/mg

Unit Definition: One unit is defined as the amount of enzyme required to hydrolyze 1 nmol of diheptanoyl thio-PC per minute at 37°C in 25 mM Tris-hydrogen chloride, pH 7.5, containing 10 mM calcium chloride, 100 mM KCl, 0.3 mM Triton X-100, 0.44 mM DTNB, and 1.48 mM diheptanoyl thio-PC.

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

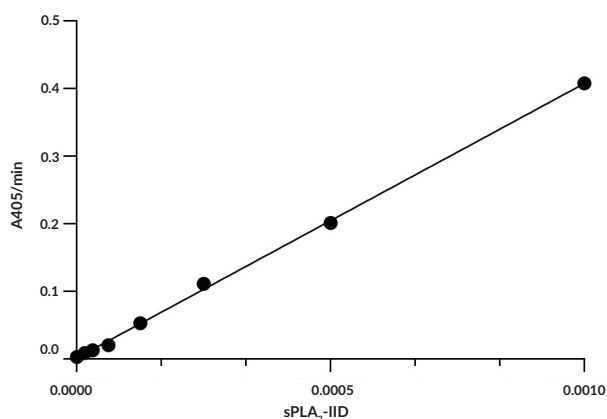
Images



Lane 1: MW Markers
Lane 2: sPLA₂ (2 μg)
Lane 3: sPLA₂ (4 μg)

SDS-PAGE Analysis of sPLA₂

Representative gel image shown; actual purity may vary between each batch.



sPLA₂ type IID activity was determined using Cayman's sPLA₂ Assay Kit (Item No. 765001) with 1.48 mM 1,2-bis(heptanoylthio) glycerophosphocholine (diheptanoyl thio-PC; Item No. 62235) as the substrate.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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PRODUCT INFORMATION



Description

Secretory phospholipase A₂ (sPLA₂) (Type IID) is a calcium-dependent PLA₂ superfamily member encoded by *PLA2G2D* in humans.¹ It is composed of a highly-conserved calcium-binding loop, catalytic domain, sPLA₂ type II-specific disulfide that provides stability, and a C-terminal extension but lacks the N-terminal signal peptide found in sPLA₂ (Type IB) and sPLA₂ (Type X). sPLA₂ (Type IID) is expressed in the pancreas, spleen, thymus, colon, small intestine, placenta, and prostate, as well as in dendritic cells and macrophages.^{2,3} It preferentially catalyzes the hydrolysis of phosphatidylethanolamine (PE) and phosphatidylglycerol (PG) over phosphatidylcholine (PC), phosphatidylserine (PS), and phosphatidic acid (PA) at the *sn*-2 position, liberating the free fatty acid and lysophospholipid, which serve as substrates for the synthesis of bioactive lipid metabolites.¹⁻³ sPLA₂ (Type IID) is involved in the adaptive immune response, immunosuppression, and inflammation.³⁻⁵ It has bactericidal activity against *M. luteus* and *E. coli* *in vitro*.⁶ Knockout of *Pla2g2d* decreases tumor number and weight in a mouse model of skin carcinogenesis induced by 9,10-dimethylbenz(a)anthracene (9,10-DMBA) and phorbol 12-myristate 13-acetate (TPA; Item No. 10008014) and prevents resolution of ear swelling in a mouse model of contact hypersensitivity induced by the hapten antigen dinitrofluorobenzene (DNFB).^{3,5} SNPs in *PLA2G2D* are associated with body weight loss in patients with chronic obstructive pulmonary disease (COPD).⁷ Cayman's sPLA₂ (human, recombinant Type IID) protein can be used for enzyme activity assays.

References

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