

PRODUCT INFORMATION



Autotaxin (human, recombinant)

Item No. 10803

Overview and Properties

Synonyms: ATX, Ectonucleotide Pyrophosphatase/Phosphodiesterase-2, ENPP-2, Lyso-PLD, Lysophospholipase D

Source: Active recombinant human autotaxin expressed in insect cells

Amino Acids: 36-863

Uniprot No.: Q13822-1

Molecular Weight: 98.8 kDa

Storage: -80°C (as supplied)

Stability: ≥2 years

Purity: ≥90% estimated by SDS-PAGE

Supplied in: 50 mM Tris-HCl, pH 8.0, with 150 mM sodium chloride and 20% glycerol

Protein Concentration: *batch specific* mg/ml

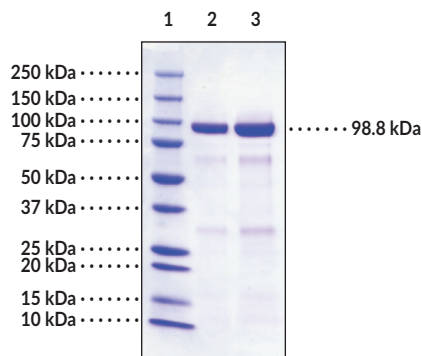
Activity: *batch specific* U/ml

Specific Activity: *batch specific* U/mg

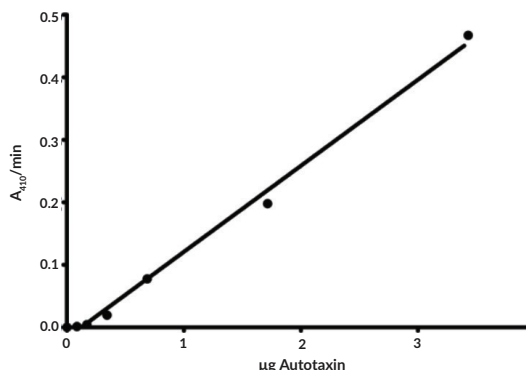
Unit Definition: One unit is defined as the amount of enzyme required to produce 1 μmol of *p*-nitrophenol per minute at 37°C in 50 mM Tris-HCl, pH 9.0, containing *bis*-nitrophenol phosphate.

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

Images



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



Autotaxin activity is determined by measuring hydrolysis of *bis*-nitrophenol phosphate. Production of *p*-nitrophenol is measured by monitoring the increase in absorbance at 410 nm.

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.

Copyright Cayman Chemical Company, 11/06/2024

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM

PRODUCT INFORMATION



Description

Autotaxin, also known as ectonucleotide pyrophosphatase/phosphodiesterase 2 (ENPP2), is a secreted lysophospholipase D (lysoPLD) that hydrolyzes lysophosphatidylcholine (LPC) to lysophosphatidic acid (LPA), which has roles in cell proliferation, survival, and migration.¹ It is synthesized as a zymogen and is composed of a N-terminal signal peptide, which is cleaved during maturation, two somatomedin B-like domains, a phosphodiesterase (PDE) catalytic domain, and a C-terminal nuclease-like domain.^{2,3} It is constitutively active and inhibited by LPA in a negative feedback loop.^{4,5} Autotaxin is secreted primarily by adipose tissue and endothelial cells and has been found in numerous biological fluids, including the blood, cerebrospinal fluid, and saliva. It is overexpressed in a variety of cancers, including glioblastoma multiforme, melanoma, and hepatocarcinoma.⁴⁻⁶ Autotaxin has roles in cell motility, immune regulation, and embryogenesis.^{4,5} Knockout of *Enpp2* is embryonic lethal in mice.⁴ Autotaxin activity is increased in the serum of patients with a variety of conditions, including rheumatoid arthritis, chronic hepatitis C, or cholestasis, and serum autotaxin levels are increased in patients with asthma, acute respiratory distress syndrome (ARDS), or coronavirus disease 2019 (COVID-19).^{3,7} Formulations containing autotaxin inhibitors have been used in clinical trials for the treatment of various diseases, including idiopathic pulmonary fibrosis (IPF), metabolic disorders, and cancer.⁷ Cayman's Autotaxin (human, recombinant) protein can be used for enzyme activity assays.

References

1. Nishimasu, H., Okudaira, S., Hama, K., *et al.* Crystal structure of autotaxin and insight into GPCR activation by lipid mediators. *Nat. Struct. Mol. Biol.* **18**(2), 205-12 (2011).
2. Jansen, S., Stefan, C., Creemers, J.W.M., *et al.* Proteolytic maturation and activation of autotaxin (NPP2), a secreted metastasis-enhancing lysophospholipase D. *J. Cell Sci.* **118**(14), 3081-9 (2011).
3. Magkrioti, C., Galaris, A., Kanellopoulou, P., *et al.* Autotaxin and chronic inflammatory diseases. *J. Autoimmun.* **104**, 102327 (2019).
4. Jankowski, M. Autotaxin: Its role in biology of melanoma cells and as a pharmacological target. *Enzyme Res.* 194857 (2011).
5. Zhang, X., Li, M., Yin, N., *et al.* The expression regulation and biological function of autotaxin. *Cells* **10**(4), 939 (2021).
6. Ramesh, S., Govindarajulu, M., Suppiramaniam, V., *et al.* Autotaxin-lysophosphatidic acid signaling in Alzheimer's disease. *Int. J. Mol. Sci.* **19**(7), 1827 (2018).
7. Ntatsoulis, K., Karampitsakos, T., Tsitoura, E., *et al.* Commonalities between ARDS, pulmonary fibrosis and COVID-19: The potential of autotaxin as a therapeutic target. *Front. Immunol.* **12**, 687397 (2021).