

# PRODUCT INFORMATION



## Autotaxin (human, recombinant; mammalian expressed)

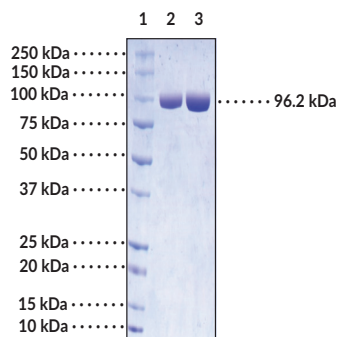
Item No. 34551

### Overview and Properties

<b>Synonyms:</b>	ATX, EC 3.1.1.39, Ectonucleotide Pyrophosphatase/Phosphodiesterase-2, ENPP-2, Lyso-PLD, Lysophospholipase D
<b>Source:</b>	Active recombinant human C-terminal His-tagged autotaxin expressed in HEK293 cells
<b>Amino Acids:</b>	36-863 (mature form)
<b>Uniprot No.:</b>	Q13822
<b>Molecular Weight:</b>	96.2 kDa
<b>Storage:</b>	-80°C (as supplied)
<b>Stability:</b>	≥1 year
<b>Purity:</b>	<i>batch specific</i> (≥95% estimated by SDS-PAGE)
<b>Supplied in:</b>	50 mM Tris, pH 8.0, with 150 mM sodium chloride and 20% glycerol
<b>Protein Concentration:</b>	<i>batch specific</i> mg/ml
<b>Activity:</b>	<i>batch specific</i> U/ml
<b>Specific Activity:</b>	<i>batch specific</i> U/mg
<b>Unit Definition:</b>	One unit is defined as the amount of enzyme required to product 1 μmol of <i>p</i> -nitrophenol per minute at 37°C in 50 mM Tris-HCl, pH 9.0, with 5 mM CaCl <sub>2</sub> , 2 mM MgCl <sub>2</sub> , and 3 mM <i>bis</i> -nitrophenol phosphate.

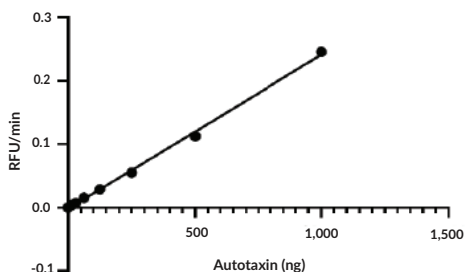
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Images



Lane 1: MW Markers  
Lane 2: 2 μg  
Lane 3: 4 μg

SDS-PAGE Analysis of Autotaxin.



Autotaxin activity was 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  
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## Description

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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.<sup>1</sup> 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.<sup>2,3</sup> It is constitutively active and inhibited by LPA in a negative feedback loop.<sup>4,5</sup> 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.<sup>4-6</sup> Autotaxin has roles in cell motility, immune regulation, and embryogenesis.<sup>4,5</sup> Knockout of *Enpp2* is embryonic lethal in mice.<sup>4</sup> 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).<sup>3,7</sup> 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.<sup>7</sup> Cayman's Autotaxin (human, recombinant; mammalian expressed) protein can be used for enzyme activity assay and Western blot (WB) applications.

## References

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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)**, 3081-3089 (2011).
3. Magkrioti, C., Galaris, A., Kanellopoulou, P., *et al.* Autotaxin and chronic inflammatory diseases. *J. Autoimmun.* **104**, 102327 (2019).
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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).

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