

Human Autotaxin ELISA Kit

Human Autotaxin Immunoassay Kit

CATALOG #
AAA60562

REACTIVITY
Human

PRODUCT SYNONYMS

Autotaxin; Human Autotaxin Immunoassay Kit; Human autotaxin; Autotaxin elisa kit

PRODUCT SPECIFICATIONS

Reactivity	Human
Assay Type	Quantitative Sandwich
Samples	Serum, plasma and fluid
Sensitivity	0.78 ng/ ml
Intra-assay Precision	<10%.
Inter-assay Precision	<10%.

ADDITIONAL INFORMATION

Related Product Information for Autotaxin elisa kit

Background: Autotaxin, also known as ENPP-2, is a secreted glycoprotein which belongs to the ectonucleotide pyrophosphatase/phosphodiesterase (NPP) family [1,2]. Generally, NPPs can hydrolyze phosphates from nucleotides. Autotaxin exhibits the unique lysophospholipase D activity [3]. The mature protein includes two somatomedin-B-like (SMB) cysteine knot domains, a catalytic domain, and an inactive C-terminal nuclease-like domain with an EF-hand-like motif that is important in cell motility, and a region involved in autotaxin secretion [1,4,5]. There are three isoforms identified in mouse and human [6,7]. Most circulating autotaxin is the beta form which contains 863 amino acid. Autotaxin contributes to the predominant extracellular source of the phospholipid LPA (lysophosphatidic acid) from LPC (lysophosphatidylcholine) [8-11]. Autotaxin can also produce minor amounts of sphingosine 1-phosphate and cyclic phosphatidic acid which can antagonize many of the tumorigenic properties of LPA [9,12]. Autotaxin stimulates tumor cell motility and enhances invasion and metastasis. It's upregulated in melanoma, glioblastoma, breast and lung carcinoma, follicular lymphoma and other cancers [2,8,11]. Autotaxin production by adipocytes enhances pre-adipocyte proliferation and may be elevated in obesity [11, 13]. Autotaxin is present in blood, urine, saliva, seminal and cerebrospinal fluids [2, 3]. In addition, plasma autotaxin is cleared by the liver which is elevated in liver disease [3, 14]. Normal serum or plasma autotaxin concentration is reported to be slightly higher in females than in males, and highest in pregnant females [2, 14].

Principle of the Assay: This assay is a quantitative sandwich ELISA. The micro-plate is pre-coated with a rabbit polyclonal antibody against human autotaxin. Standards and samples are pipetted into the wells and any human autotaxin present is bound by the immobilized antibody. After washing away any unbound substances, a biotin labelled polyclonal antibody specific for human autotaxin is added to the wells. After wash step to remove any unbound reagents, streptavidin-HRP conjugate (STP-HRP) is added. After the last wash step, an HRP substrate solution is added and colour develops in proportion to the amount of human autotaxin bound initially. The assay is stopped and the optical density of the wells determined using a microplate reader. Since the increases in absorbance are directly proportional to the amount of captured human autotaxin, the unknown sample concentration can be interpolated from a reference curve included in each assay

Intended Uses: This human autotaxin ELISA kit is designed for quantification of human autotaxin in serum, plasma and cell culture supernatant samples.

References

- Cimpean, Anisoara, et al. "Substrate-specifying determinants of the nucleotide pyrophosphatases/phosphodiesterases NPP1 and NPP2." *Biochemical Journal*1 (2004): 71-77.
- Okudaira, Shinichi, Hiroshi Yukiura, and Junken Aoki. "Biological roles of lysophosphatidic acid signaling through its production by autotaxin." *Biochimie*6 (2010): 698-706.
- Umezū-Goto, Makiko, et al. "Autotaxin has lysophospholipase D activity leading to tumor cell growth and motility by lysophosphatidic acid production." *J cell biol*2 (2002): 227-233.
- Hausmann, Jens, et al. "Structural basis of substrate discrimination and integrin binding by autotaxin." *Nature Structural and Molecular Biology* 18.2 (2011): 198.
- Dennis, Jameel, et al. "Phosphodiesterase- α /autotaxin's MORFO domain regulates oligodendroglial process network formation and focal adhesion " *Molecular and Cellular Neuroscience* 37.2 (2008): 412-424.
- van Meeteren, Laurens A., and Wouter H. Moolenaar. "Regulation and biological activities of the autotaxin-LPA axis." *Progress in lipid research*2 (2007): 145-160.
- Giganti, Adeline, et al. "Murine and Human Autotaxin α , β , and γ Isoforms GENE ORGANIZATION, TISSUE DISTRIBUTION, AND BIOCHEMICAL CHARACTERIZATION." *Journal of Biological Chemistry*12 (2008): 7776-7789.
- Gijsbers, Rik, et al. "The hydrolysis of lysophospholipids and nucleotides by autotaxin (NPP2) involves a single catalytic site." *FEBS letters*1-3 (2003): 60-64.
- Tsuda, Satomi, et al. "Cyclic phosphatidic acid is produced by autotaxin in blood." *Journal of Biological Chemistry* 281.36 (2006): 26081-26088.

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

AAA Biotech | Tel: +1 (619) 604-9440 | Fax: +1 (619) 604-9441 | contact@aaabiotech.com

Online datasheet: <https://www.aaabiotech.com/human-elisa-kits/autotaxin/60562>