SANTA CRUZ BIOTECHNOLOGY, INC.

ASTL (D-8): sc-514054

BACKGROUND

ASTL (astacin-like metalloendopeptidase), also known as ovastacin, is a 435 amino acid protein that belongs to the astacin family of metalloproteases. The human ASTL, which shares a 78% sequence identity with mouse ASTL, contains an N-terminal signal peptide, a prodomain, a zinc-dependent metalloprotease domain and a C-terminal extension that is likely to be heavily O-glycosylated. Highly expressed in unfertilized oocytes, ASTL expression drops to undetectable levels upon fertilization. ASTL has also been shown to be under hormonal regulation, as superovulation caused a dramatic increase in the expression of ASTL. The catalytic activity of ASTL is inhibited by EDTA and the wide spectrum metalloproteinase inhibitor batimastat (BB-94). The gene encoding ASTL maps to chromosome 2q11.1. Two isoforms of ASTL2 exist as a result of alternative splicing events.

REFERENCES

1. Stöcker, W., et al. 1993. Implications of the three-dimensional structure of astacin for the structure and function of the astacin family of zinc-endopeptidases. Eur. J. Biochem. 214: 215-231.
2. Bond, J.S. and Beynon, R.J. 1995. The astacin family of metalloendopeptidases. Protein Sci. 4: 1247-1261.
3. Quesada, V., et al. 2004. Identification and characterization of human and mouse ovastacin: a novel metalloproteinase similar to hatching enzymes from arthropods, birds, amphibians, and fish. J. Biol. Chem. 279: 26627-26634.

CHROMOSOMAL LOCATION

Genetic locus: ASTL (human) mapping to 2q11.1; Astl (mouse) mapping to 2 F1.

SOURCE

ASTL (D-8) is a mouse monoclonal antibody raised against amino acids 2-207 mapping near the N-terminus of ASTL of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

ASTL (D-8) is available conjugated to agarose (sc-514054 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-514054 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514054 PE), fluorescein (sc-514054 FITC), Alexa Fluor® 488 (sc-514054 AF488), Alexa Fluor® 546 (sc-514054 AF546), Alexa Fluor® 594 (sc-514054 AF594) or Alexa Fluor® 647 (sc-514054 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-514054 AF680) or Alexa Fluor® 790 (sc-514054 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

ASTL (D-8) is recommended for detection of ASTL of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for ASTL siRNA (h): sc-94887, ASTL siRNA (m): sc-141309, ASTL shRNA Plasmid (h): sc-94887-SH, ASTL shRNA Plasmid (m): sc-141309-SH, ASTL shRNA (h) Lentiviral Particles: sc-94887-V and ASTL shRNA (m) Lentiviral Particles: sc-141309-V.

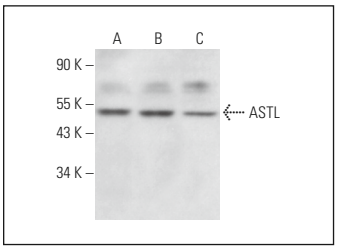
Molecular Weight of ASTL: 46 kDa.

Positive Controls: ASTL (m): 293T Lysate: sc-126457, HL-60 whole cell lysate: sc-2209 or Raji whole cell lysate: sc-364236.

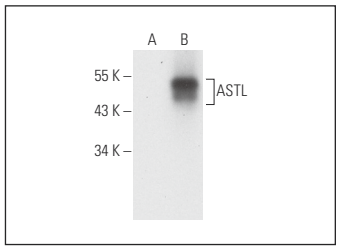
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



ASTL (D-8): sc-514054. Western blot analysis of ASTL expression in F9 (**A**), HL-60 (**B**) and Raji (**C**) whole cell lysates.



ASTL (D-8): sc-514054. Western blot analysis of ASTL expression in non-transfected: sc-117752 (**A**) and mouse ASTL transfected: sc-126457 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Lu, Y., et al. 2022. Toxic effects of 4-methylimidazole on the maturation and fertilization of mouse oocytes. Food Chem. Toxicol. 164: 113051.
2. Wu, H., et al. 2023. Novel biallelic ASTL variants are associated with polyspermy and female infertility: a successful live birth following ICSI treatment. Gene 887: 147745.

RESEARCH USE

For research use only, not for use in diagnostic procedures.