SANTA CRUZ BIOTECHNOLOGY, INC.

PAO (S-14): sc-31661

BACKGROUND

Mammalian polyamine catabolism is under the control of two enzymes, spermidine/spermine N1-acetyltransferase and the flavin adenine dinucleotide-dependent polyamine oxidase (PAO). In the polyamine back-conversion pathway, spermine and spermidine are acetylated by SSAT-1 and then oxidized by PAO to produce spermidine and putrescine, respectively. The PAO protein regulates polyamine intracellular concentration and may act as a determinant of cellular sensitivity to the antitumor polyamine analogs. PAO contributes to β-alaline production via aldehyde dehydrogenase conversion of 3-amino-propanal. The PAO gene encodes more than five transcript variants which encode four active isoenzymes. The longest isoenzyme, PAOh1, represents a new addition to the polyamine metabolic pathway and may be a target for antineoplastic drug development .

REFERENCES

1. Parry, L., Lopez-Ballester, J., Wiest, L. and Pegg, A.E. 1995. Effect of expression of human spermidine/spermine N1-acetyltransferase in *Escherichia coli*. Biochemistry 34: 2701-2709.
2. Vujcic, S., Diegelman, P., Bacchi, C.J., Kramer, D.L. and Porter, C.W. 2002. Identification and characterization of a novel flavin-containing spermine oxidase of mammalian cell origin. Biochem. J. 367: 665-675.
3. Wang, Y., Murray-Stewart, T., Devereux, W., Hacker, A., Frydman, B., Woster, P.M. and Casero, R.A. Jr. 2003. Properties of purified recombinant human polyamine oxidase, PAOh1/SMO. Biochem. Biophys. Res. Commun. 304: 605-611.
4. Chen, Y., Vujcic, S., Liang, P., Diegelman, P., Kramer, D.L. and Porter, C.W. 2003. Genomic identification and biochemical characterization of a second spermidine/spermine N1-acetyltransferase. Biochem. J. 373: 661-667.

CHROMOSOMAL LOCATION

Genetic locus: SMOX (human) mapping to 20p13; Smox (mouse) mapping to 2 F1.

SOURCE

PAO (S-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of PAO1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-31661 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

RESEARCH USE

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

APPLICATIONS

PAO (S-14) is recommended for detection of PAO1,2 and 4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

PAO (S-14) is also recommended for detection of PAO1,2 and 4 in additional species, including equine, canine, bovine, porcine and avian.

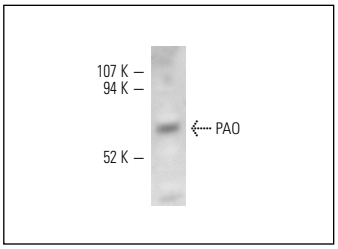
Molecular Weight of PAO: 62 kDa.

Positive Controls: rat testis extract: sc-2400 or LADMAC whole cell lysate: sc-364189.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



PAO (S-14): sc-31661. Western blot analysis of PAO expression in rat testis tissue extract.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.