

P4HA2 (S-15): sc-161146

BACKGROUND

P4HA1 (prolyl 4-hydroxylase, alpha polypeptide I) and P4HA1 (prolyl 4-hydroxylase, α polypeptide II) are 534 and 535 amino acid proteins, respectively, that each localize to the lumen of the endoplasmic reticulum and contain one TPR repeat, as well as one PKHD domain. Using ascorbate and iron as cofactors, P4HA1 and P4HA2 catalyze the posttranslational formation of 4-hydroxyproline in collagens and other proteins, thereby playing an essential role in the proper folding of newly synthesized peptides. P4HA1 exists as a heterotetramer of two α -1 and two β chains, while P4HA2 exists as a heterotetramer of two α -2 chains and two β chains. Both P4HA1 and P4HA2 exists as multiple alternatively spliced isoforms.

REFERENCES

- Helaakoski, T., et al. 1989. Molecular cloning of the α -subunit of human prolyl 4-hydroxylase: the complete cDNA-derived amino acid sequence and evidence for alternative splicing of RNA transcripts. *Proc. Natl. Acad. Sci. USA* 86: 4392-4396.
- Nokelainen, M., et al. 2001. Characterization of the human and mouse genes for the α subunit of type II prolyl 4-hydroxylase. Identification of a previously unknown alternatively spliced exon and its expression in various tissues. *Eur. J. Biochem.* 268: 5300-5309.
- Kukkola, L., et al. 2003. Identification and characterization of a third human, rat, and mouse collagen prolyl 4-hydroxylase isoenzyme. *J. Biol. Chem.* 278: 47685-47693.
- Grimmer, C., et al. 2006. Regulation of type II collagen synthesis during osteoarthritis by prolyl-4-hydroxylases: possible influence of low oxygen levels. *Am. J. Pathol.* 169: 491-502.
- Chen, L., et al. 2006. Human prolyl-4-hydroxylase α -1 transcription is mediated by upstream stimulatory factors. *J. Biol. Chem.* 281: 10849-10855.

CHROMOSOMAL LOCATION

Genetic locus: P4HA2 (human) mapping to 5q31.1; P4ha2 (mouse) mapping to 11 B1.3.

SOURCE

P4HA2 (S-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of P4HA2 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-161146 P, (100 μ g 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.

APPLICATIONS

P4HA2 (S-15) is recommended for detection of P4HA2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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); non cross-reactive with P4HA1 or P4HA3.

P4HA2 (S-15) is also recommended for detection of P4HA2 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for P4HA2 siRNA (h): sc-92052, P4HA2 siRNA (m): sc-151966, P4HA2 shRNA Plasmid (h): sc-92052-SH, P4HA2 shRNA Plasmid (m): sc-151966-SH, P4HA2 shRNA (h) Lentiviral Particles: sc-92052-V and P4HA2 shRNA (m) Lentiviral Particles: sc-151966-V.

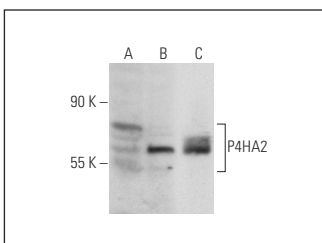
Molecular Weight of P4HA2: 61 kDa.

Positive Controls: A-10 cell lysate: sc-3806 or P4HA2 (h): 293T Lysate: sc-115446.

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



P4HA2 (S-15): sc-161146. Western blot analysis of P4HA2 expression in non-transfected 293T: sc-117752 (A), human P4HA2 transfected 293T: sc-115446 (B) and A-10 (C) whole cell lysates.

RESEARCH USE

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

PROTOCOLS

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