

PRODH2 (S-21): sc-102066

BACKGROUND

Probable proline dehydrogenase 2 (PRODH2), also known as HSPOX1 or kidney and liver proline oxidase 1, is a 536 amino acid member of the proline oxidase family. The primary function of PRODH2 is to convert proline into δ 1-pyrroline-5-carboxylate (P5C). Proline, functioning as a source of glutamate, arginine and tricarboxylic acid-cycle, intermediates and, taking part in shuttling redox equivalents between mitochondria and cytosol, plays a critical role in protein synthesis. P5C, with the help of ALDH4A1 (also known as 1-pyrroline-5-carboxylate dehydrogenase or P5CDH), is converted into glutamate, one of the most common neurotransmitters in the brain. The PRODH2 gene maps to chromosome 19q13.12 and mutations in this gene have been associated with increased susceptibility to schizophrenia.

REFERENCES

- Geraghty, M.T., et al. 1998. Mutations in the δ 1-pyrroline 5-carboxylate dehydrogenase gene cause type II hyperprolinemia. *Hum. Mol. Genet.* 7: 1411-1415.
- Liu, H., et al. 2002. Genetic variation at the 22q11 PRODH2/DGCR6 locus presents an unusual pattern and increases susceptibility to schizophrenia. *Proc. Natl. Acad. Sci. USA* 99: 3717-3722.
- Chakravarti, A. 2002. A compelling genetic hypothesis for a complex disease: PRODH2/DGCR6 variation leads to schizophrenia susceptibility. *Proc. Natl. Acad. Sci. USA* 99: 4755-4756.
- Deuschle, K., et al. 2004. The role of δ 1-pyrroline-5-carboxylate dehydrogenase in proline degradation. *Plant Cell* 16: 3413-3425.
- White, T.A., et al. 2007. Structure and kinetics of monofunctional proline dehydrogenase from *Thermus thermophilus*. *J. Biol. Chem.* 282: 14316-14327.
- Zinkstok, J., et al. 2008. Genetic variation in COMT and PRODH is associated with brain anatomy in patients with schizophrenia. *Genes Brain Behav.* 7: 61-69.
- Cooper, S.K., et al. 2008. A novel function for hydroxyproline oxidase in apoptosis through generation of reactive oxygen species. *J. Biol. Chem.* 283: 10485-10492.

CHROMOSOMAL LOCATION

Genetic locus: PRODH2 (human) mapping to 19q13.12.

SOURCE

PRODH2 (S-21) is a purified rabbit polyclonal antibody raised against PRODH2 of human origin.

PRODUCT

Each vial contains 50 μ g IgG in 500 μ l PBS with < 0.1% sodium azide, 0.1% gelatin and <0.02% sucrose.

STORAGE

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

APPLICATIONS

PRODH2 (S-21) is recommended for detection of PRODH2 of human and dog 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), immunohistochemistry (including paraffin-embedded sections) (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 PRODH2 siRNA (h): sc-97351, PRODH2 shRNA Plasmid (h): sc-97351-SH and PRODH2 shRNA (h) Lentiviral Particles: sc-97351-V.

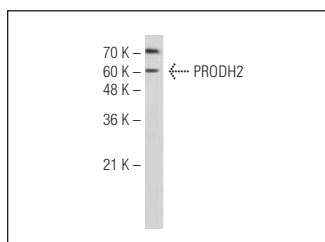
Molecular Weight of PRODH2: 59 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204.

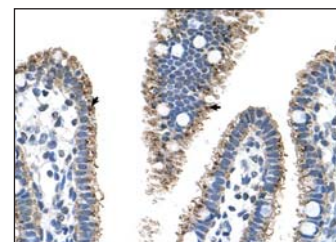
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



PRODH2 (S-21): sc-102066. Western blot analysis of PRODH2 expression in Jurkat whole cell lysate.



PRODH2 (S-21): sc-102066. Immunoperoxidase staining of formalin fixed, paraffin-embedded human intestine tissue showing cytoplasmic staining.

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.