SANTA CRUZ BIOTECHNOLOGY, INC.

PEPD (47-Q): sc-100708

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

PEPD (peptidase D), also referred to as prolidase, is a cytosolic dipeptidase that belongs to the peptidase M24B family. PEPD hydrolyzes di- and tri-peptides with proline or hydroxyproline at the C-terminus. PEPD functions as a homodimer and may play an important role in collagen metabolism as well as in the recycling of proline in various cells and tissues. Defects in the gene encoding PEPD are the primary cause of prolidase deficiency in humans. Prolidase deficiency is an autosomal recessive disorder associated with iminodipeptiduria and is characterized by skin ulcers, mental retardation, recurrent infections and A-typical facies. Mutations in the gene encoding PEPD may also be the cause of systemic lupus erythematosus and necrosis-like cell death in fibroblasts. Additionally, there is thought to be a tight linkage between the polymorphisms of prolidase and the myotonic dystrophy trait.

REFERENCES

1. Leoni, A., et al. 1987. Prolidase deficiency in two siblings with chronic leg ulcerations. Clinical, biochemical, and morphologic aspects. Arch. Dermatol. 123: 493-499.
2. Boright, A.P., et al. 1989. Prolidase deficiency: biochemical classification of alleles. Am. J. Hum. Genet. 44: 731-740.
3. Tanoue, A., et al. 1990. Structural organization of the gene for human prolidase (peptidase D) and demonstration of a partial gene deletion in a patient with prolidase deficiency. J. Biol. Chem. 265: 11306-11311.
4. Endo, F. and Matsuda, I. 1991. Molecular basis of prolidase (peptidase D) deficiency. Mol. Biol. Med. 8: 117-127.
5. Henrich, B., et al. 1992. The promoter region of the *Escherichia coli* pepD gene: deletion analysis and control by phosphate concentration. Mol. Gen. Genet. 232: 117-125.
6. Ledoux, P., et al. 1994. Four novel PEPD alleles causing prolidase deficiency. Am. J. Hum. Genet. 54: 1014-1021.
7. Kikuchi, S., et al. 2000. A novel nonsense mutation of the PEPD gene in a Japanese patient with prolidase deficiency. J. Hum. Genet. 45: 102-104.
8. Forlino, A., et al. 2002. Mutation analysis of five new patients affected by prolidase deficiency: the lack of enzyme activity causes necrosis-like cell death in cultured fibroblasts. Hum. Genet. 111: 314-322.
9. Wang, H., et al. 2006. A nonsense mutation of PEPD in four Amish children with prolidase deficiency. Am. J. Med. Genet. A 140: 580-585.

CHROMOSOMAL LOCATION

Genetic locus: PEPD (human) mapping to 19q13.11.

SOURCE

PEPD (47-Q) is a mouse monoclonal antibody raised against recombinant PEPD of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

PEPD (47-Q) is recommended for detection of PEPD of 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).

Suitable for use as control antibody for PEPD siRNA (h): sc-97436, PEPD shRNA Plasmid (h): sc-97436-SH and PEPD shRNA (h) Lentiviral Particles: sc-97436-V.

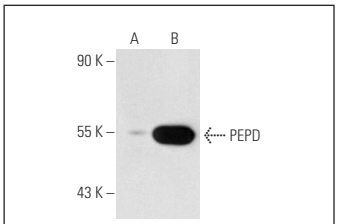
Molecular Weight of PEPD: 58 kDa.

Positive Controls: PEPD (h): 293 Lysate: sc-112212 or Hep G2 cell lysate: sc-2227.

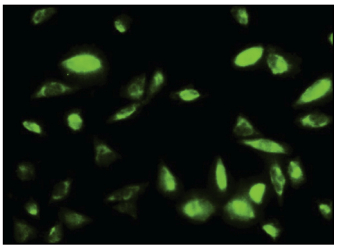
RECOMMENDED SUPPORT REAGENTS

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



PEPD (47-Q): sc-100708. Western blot analysis of PEPD expression in non-transfected: sc-110760 (**A**) and human PEPD transfected: sc-112212 (**B**) 293 whole cell lysates.



PEPD (47-Q): sc-100708. Immunofluorescence staining of paraformaldehyde-fixed HepG2 cells showing nuclear and cytoplasmic localization.

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.

PROTOCOLS

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