

serum carnosinase (E-14): sc-79722

BACKGROUND

Serum carnosinase, also known as CNDP1 (carnosine dipeptidase 1), CN1 or CPGL2, is a 507 amino acid protein that is secreted into central nervous system (CNS) tissue and is a member of the peptidase M20A family. Existing as a homodimer, serum carnosinase uses zinc as a cofactor to catalyze the hydrolysis of β -Ala-I-His and Xaa-I-His dipeptides, including carnosine, thereby playing a role in glucose metabolism. Serum carnosinase functions as an optimal pH of 8.5 and contains a varying number of trinucleotide (CTG) repeats that control its enzymatic activity. Polymorphisms in the serum carnosinase gene are associated with homocarnosinosis, as well as with diabetic nephropathy in type 1 diabetes. The gene encoding serum carnosinase maps to human chromosome 18, which houses over 300 protein-coding genes and contains nearly 76 million bases.

REFERENCES

1. Lenney, J.F., et al. 1982. Human serum carnosinase: characterization, distinction from cellular carnosinase, and activation by cadmium. *Clin. Chim. Acta.* 123: 221-231.
2. Teufel, M., et al. 2003. Sequence identification and characterization of human carnosinase and a closely related non-specific dipeptidase. *J. Biol. Chem.* 278: 6521-6531.
3. Janssen, B., et al. 2005. Carnosine as a protective factor in diabetic nephropathy: association with a leucine repeat of the carnosinase gene CNDP1. *Diabetes* 54: 2320-2327.
4. Zschocke, J., et al. 2006. Allelic variation in the CNDP1 gene and its lack of association with longevity and coronary heart disease. *Mech. Ageing Dev.* 127: 817-820.
5. Riedl, E., et al. 2007. A CTG polymorphism in the CNDP1 gene determines the secretion of serum carnosinase in Cos-7 transfected cells. *Diabetes*. 56: 2410-2413.
6. Sauerhöfer, S., et al. 2007. L-carnosine, a substrate of carnosinase-1, influences glucose metabolism. *Diabetes*. 56: 2425-2432.

CHROMOSOMAL LOCATION

Genetic locus: CNDP1 (human) mapping to 18q22.3; Cndp1 (mouse) mapping to 18 E4.

SOURCE

serum carnosinase (E-14) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within an internal region of serum carnosinase of human origin.

PRODUCT

Each vial contains 100 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-79722 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

serum carnosinase (E-14) is recommended for detection of serum carnosinase 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).

serum carnosinase (E-14) is also recommended for detection of serum carnosinase in additional species, including bovine and porcine.

Suitable for use as control antibody for serum carnosinase siRNA (h): sc-76482, serum carnosinase siRNA (m): sc-76483, serum carnosinase shRNA Plasmid (h): sc-76482-SH, serum carnosinase shRNA Plasmid (m): sc-76483-SH, serum carnosinase shRNA (h) Lentiviral Particles: sc-76482-V and serum carnosinase shRNA (m) Lentiviral Particles: sc-76483-V.

Molecular Weight of monomer serum carnosinase: 82 kDa.

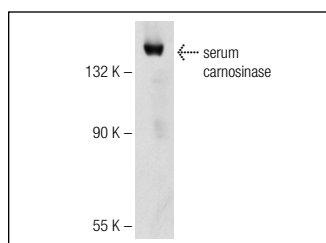
Molecular Weight of homodimer serum carnosinase: 167 kDa.

Positive Controls: mouse brain extract: sc-2253 or rat cerebellum extract: sc-2398.

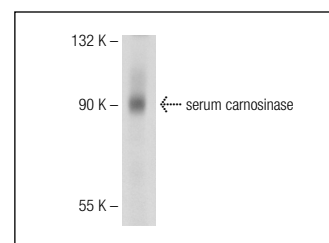
RECOMMENDED SECONDARY REAGENTS

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.

DATA



serum carnosinase (E-14): sc-79722. Western blot analysis of serum carnosinase expression in mouse brain tissue extract.



serum carnosinase (E-14): sc-79722. Western blot analysis of serum carnosinase expression in rat cerebellum tissue extract.

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.