SANTA CRUZ BIOTECHNOLOGY, INC.

CA VI (I-18)-R: sc-27893-R

BACKGROUND

Carbonic anhydrase VI (CA VI) contributes to taste function when secreted in the saliva by protecting taste receptor cells (TRCs) from apoptosis. Functional CA VI exists as a single polypeptide chain tightly bound to one molecule of zinc and containing two N-linked glycosylation sites. Decreased CA VI secretion correlates with loss of taste (hypogeusia) and smell (hyposmia) or distorted taste (dysgeusia) and smell (dysosmia), and altered taste bud morphology. Addition of zinc to individuals experiencing these symptoms has been shown to restore secretion of CA VI to normal levels and normal taste bud morphology in some but not all cases, indicating two different mechanisms leading to CA VI dysfunction.

REFERENCES

1. Sutherland, G.R., Baker, E., Fernandez, K.E., Callen, D.F., Aldred, P., Coghlan, J.P., Wright, R.D. and Fernley, R.T. 1989. The gene for human carbonic anhydrase VI (CA VI) is on the tip of the short arm of chromosome 1. Cytogenet. Cell Genet. 50: 149-150.
2. Fernley, R.T., Wright, R.D. and Coghlan, J.P. 1991. Radioimmunoassay of carbonic anhydrase VI in saliva and sheep tissues. Biochem. J. 274 Pt. 2: 313-316.
3. Ogawa, Y., Hong, S.S., Toyosawa, S., Kuwahara, H., Shimazaki, M. and Yagi, T. 1993. Immunoelectron microscopy of carbonic anhydrase isozyme VI in human submandibular gland: comparison with isozymes I and II. J. Histochem. Cytochem. 41: 343-351.
4. Parkkila, S., Parkkila, A.K., Vierjoki, T., Ståhlberg, T. and Rajaniemi, H. 1993. Competitive time-resolved immunofluorometric assay for quantifying carbonic anhydrase VI in saliva. Clin. Chem. 39: 2154-2157.
5. Parkkila, S., Parkkila, A.K. and Rajaniemi, H. 1995. Circadian periodicity in salivary carbonic anhydrase VI concentration. Acta Physiol. Scand. 154: 205-211.
6. Kivelä, J., Parkkila, S., Waheed, A., Parkkila, A.K., Sly, W.S. and Rajaniemi, H. 1997. Secretory carbonic anhydrase isoenzyme (CA VI) in human serum. Clin. Chem. 43: 2318-2322.
7. Thatcher, B.J., Doherty, A.E., Orvisky, E., Martin, B.M. and Henkin, R.I. 1998. Gustin from human parotid saliva is carbonic anhydrase VI. Biochem. Biophys. Res. Commun. 250: 635-641.
8. Henkin, R.I., Martin, B.M. and Agarwal, R.P. 1999. Efficacy of exogenous oral zinc in treatment of patients with carbonic anhydrase VI deficiency. Am. J. Med. Sci. 318: 392-405.
9. Leinonen, J., Parkkila, S., Kaunisto, K., Koivunen, P. and Rajaniemi, H. 2001. Secretion of carbonic anhydrase isoenzyme VI (CA VI) from human and rat lingual serous von Ebner's glands. J. Histochem. Cytochem. 49: 657-662.

CHROMOSOMAL LOCATION

Genetic locus: Car6 (mouse) mapping to 4 E2.

RESEARCH USE

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

SOURCE

CA VI (I-18)-R is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within an internal region of Carbonic Anhydrase VI of mouse 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-27893 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CA VI (I-18)-R is recommended for detection of precursor and mature CA VI of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 CA VI siRNA (m): sc-77335, CA VI shRNA Plasmid (m): sc-77335-SH and CA VI shRNA (m) Lentiviral Particles: sc-77335-V.

Molecular Weight of glycosylated CA VI: 37 kDa.

Molecular Weight of deglycosylated CA VI: 33 kDa.

Positive Controls: rat lingual mucous glands.

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) 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.

STORAGE

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

PROTOCOLS

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