

lacritin (P-13): sc-138805

BACKGROUND

The lacrimal functional unit (LFU) is an integrated system consisting of lacrimal glands, ocular surface glands (cornea, conjunctiva and meibomian glands), eyelids and associated sensory and motor nerves. The LFU maintains a healthy ocular surface primarily through a properly functioning tear film that provides protection, lubrication and an environment for corneal epithelial cell renewal. LFU cells express thousands of proteins including lacritin. Lacritin, also known as LACRT, is a 138 amino acid secreted protein that is expressed in secretory granules of many acinar cells in lacrimal gland and in scattered acinar cells of salivary glands. Considered a novel LFU-specific growth factor and glycoprotein in human tears, lacritin flows through ducts to target corneal epithelial cells on the ocular surface and promotes basal tear peroxidase secretion. Downregulation of lacritin leads to blepharitis and other dry eye syndromes.

REFERENCES

1. Sanghi, S., Kumar, R., Lumsden, A., Dickinson, D., Klepeis, V., Trinkaus-Randall, V., Frierson, H.F. and Laurie, G.W. 2001. cDNA and genomic cloning of lacritin, a novel secretion enhancing factor from the human lacrimal gland. *J. Mol. Biol.* 310: 127-139.
2. Weigelt, B., Bosma, A.J. and van 't Veer, L.J. 2003. Expression of a novel lacrimal gland gene lacritin in human breast tissues. *J. Cancer Res. Clin. Oncol.* 129: 735-736.
3. Wang, J., Wang, N., Xie, J., Walton, S.C., McKown, R.L., Raab, R.W., Ma, P., Beck, S.L., Coffman, G.L., Hussaini, I.M. and Laurie, G.W. 2006. Restricted epithelial proliferation by lacritin via PKC α -dependent NFAT and mTOR pathways. *J. Cell. Biol.* 174: 689-700.
4. Ma, P., Beck, S.L., Raab, R.W., McKown, R.L., Coffman, G.L., Utani, A., Chirico, W.J., Rapraeger, A.C. and Laurie, G.W. 2006. Heparanase deglycosylation of syndecan-1 is required for binding of the epithelial-restricted prosecretory mitogen lacritin. *J. Cell. Biol.* 174: 1097-1106.
5. Nakajima, T., Walkup, R.D., Tochigi, A., Shearer, T.R. and Azuma, M. 2007. Establishment of an appropriate animal model for lacritin studies: cloning and characterization of lacritin in monkey eyes. *Exp. Eye Res.* 85: 651-658.
6. Ma, P., Wang, N., McKown, R.L., Raab, R.W. and Laurie, G.W. 2008. Focus on molecules: lacritin. *Exp. Eye Res.* 86: 457-458.
7. McKown, R.L., Wang, N., Raab, R.W., Karnati, R., Zhang, Y., Williams, P.B. and Laurie, G.W. 2009. Lacritin and other new proteins of the lacrimal functional unit. *Exp. Eye Res.* 88: 848-858.
8. Morimoto-Tochigi, A., Walkup, R.D., Nakajima, E., Shearer, T.R. and Azuma, M. 2010. Mechanism for carbachol-induced secretion of lacritin in cultured monkey lacrimal acinar cells. *Invest. Ophthalmol. Vis. Sci.* 51: 4395-4406.

CHROMOSOMAL LOCATION

Genetic locus: LACRT (human) mapping to 12q13.2.

RESEARCH USE

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

SOURCE

lacritin (P-13) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within an extracellular domain of lacritin 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-138805 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

lacritin (P-13) is recommended for detection of lacritin of human origin by Western Blotting (starting dilution 1:100, dilution range 1:50-1:500), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:25, dilution range 1:25-1:250) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for lacritin siRNA (h): sc-95747, lacritin shRNA Plasmid (h): sc-95747-SH and lacritin shRNA (h) Lentiviral Particles: sc-95747-V.

Molecular Weight of lacritin: 21 kDa.

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.

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.