

# HAS3 (H-64): sc-66917

## BACKGROUND

HAS1, HAS2 and HAS3 are HA (hyaluronan or hyaluronic acid) synthase proteins. The extracellular matrix in most vertebrates express HA, which is a high molecular weight linear polysaccharide composed of alternating glucuronic acid and N-acetylglucosamine residues linked by  $\beta$ -1,3 and  $\beta$ -1,4 glycosidic bonds. The three HAS genes show distinct patterns of expression during development and their protein products play significantly different roles in the formation of the HA matrix. Both HAS1 and HAS2 synthesize high molecular-weight HA, whereas HAS3 produces lower molecular weight HA. The expression of the three HAS isoforms is more prominent in growing cells than in resting cells and is differentially regulated by various stimuli, suggesting distinct functional roles of the three proteins. HAS3 produces both secreted and cell-associated forms of hyaluronan and is the most active of the three isoforms of this enzyme in adults. HAS3 gene expression plays a crucial role in the regulation of hyaluronan synthesis in the epidermis. Specifically, IFN- $\gamma$  markedly upregulates HAS3 mRNA, whereas TGF $\beta$  downregulates HAS3 transcript levels. The human HAS3 gene maps to chromosome 16q22.1.

## CHROMOSOMAL LOCATION

Genetic locus: HAS3 (human) mapping to 16q22.1; Has3 (mouse) mapping to 8 D3.

## SOURCE

HAS3 (H-64) is a rabbit polyclonal antibody raised against amino acids 124-187 mapping within an internal region of HAS3 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

HAS3 (H-64) is recommended for detection of HAS3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ 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).

HAS3 (H-64) is also recommended for detection of HAS3 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for HAS3 siRNA (h): sc-45295, HAS3 siRNA (m): sc-45296, HAS3 shRNA Plasmid (h): sc-45295-SH, HAS3 shRNA Plasmid (m): sc-45296-SH, HAS3 shRNA (h) Lentiviral Particles: sc-45295-V and HAS3 shRNA (m) Lentiviral Particles: sc-45296-V.

Molecular Weight of HAS3 isoforms: 63/31 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or HAS3 (h): 293T Lysate: sc-113978.

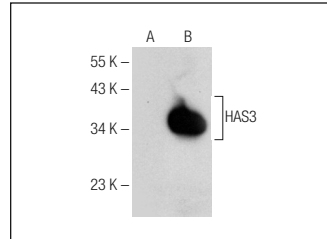
## RESEARCH USE

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

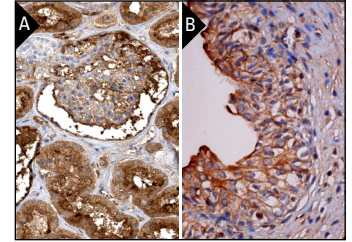
## STORAGE

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

## DATA



HAS3 (H-64): sc-66917. Western blot analysis of HAS3 expression in non-transfected: sc-117752 (A) and human HAS3 transfected: sc-113978 (B) 293T whole cell lysates.



HAS3 (H-64): sc-66917. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules at high magnification. Kindly provided by The Swedish Human Protein Atlas (HPA) program (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human urinary bladder tissue showing membrane and cytoplasmic staining of urothelial cells (B).

## SELECT PRODUCT CITATIONS

- Perry, K., et al. 2012. Cervical expression of hyaluronan synthases varies with the stage of the estrous cycle in the ewe. *Theriogenology* 77: 1100-1110.
- Barnes, L., et al. 2012. Increased expression of CD44 and hyaluronate synthase 3 is associated with accumulation of hyaluronate in spongiotic epidermis. *J. Invest. Dermatol.* 132: 736-738.
- Raheem, K.A., et al. 2013. Regulation of the hyaluronan system in ovine endometrium by ovarian steroids. *Reproduction* 145: 491-504.
- Galloway, J.L., et al. 2013. The control and importance of hyaluronan synthase expression in palatogenesis. *Front. Physiol.* 4: 10.

## PROTOCOLS

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Try **HAS3 (G-12): sc-365322**, our highly recommended monoclonal alternative to HAS3 (H-64).