SANTA CRUZ BIOTECHNOLOGY, INC.

# HAS3 (G-12): sc-365322

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## 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 β-1,3 and β-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-γ markedly upregulates HAS3 mRNA, whereas TGFβ downregulates HAS3 transcript levels. The human HAS3 gene maps to chromosome 16q22.1.

## REFERENCES


1. Spicer, A.P., et al. 1997. Chromosomal localization of the human and mouse hyaluronan synthase genes. Genomics 41: 493-497.
2. Itano, N., et al. 1999. Three isoforms of mammalian hyaluronan synthases have distinct enzymatic properties. J. Biol. Chem. 274: 25085-25092.
3. Jacobson, A., et al. 2000. Expression of human hyaluronan synthases in response to external stimuli. Biochem. J. 1: 29-35.
4. Ijuin, C., et al. 2001. Regulation of hyaluronan synthase gene expression in human periodontal ligament cells by tumour necrosis factor-α, interleukin-1β and interferon-γ. Arch. Oral Biol. 46: 767-772.
5. Liu, N., et al. 2001. Hyaluronan synthase 3 overexpression promotes the growth of TSU prostate cancer cells. Cancer Res. 61: 5207-5214.


## CHROMOSOMAL LOCATION

Genetic locus: HAS3 (human) mapping to 16q22.1.

## SOURCE

HAS3 (G-12) is a mouse monoclonal antibody raised against amino acids 124-187 mapping within an internal region of HAS3 of human origin.

## PRODUCT

Each vial contains 200 µg $IgG_{2b}$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

HAS3 (G-12) is available conjugated to agarose (sc-365322 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-365322 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365322 PE), fluorescein (sc-365322 FITC), Alexa Fluor® 488 (sc-365322 AF488), Alexa Fluor® 546 (sc-365322 AF546), Alexa Fluor® 594 (sc-365322 AF594) or Alexa Fluor® 647 (sc-365322 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365322 AF680) or Alexa Fluor® 790 (sc-365322 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

HAS3 (G-12) is recommended for detection of HAS3 of human origin by Western Blotting (starting dilution 1:100, 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), 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).

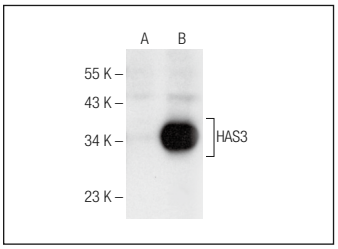
HAS3 (G-12) is also recommended for detection of HAS3 in additional species, including bovine.

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

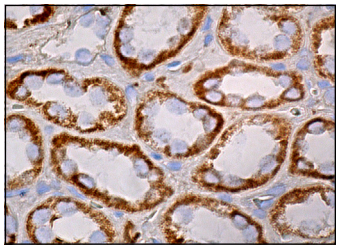
Molecular Weight of HAS3 isoforms: 63/31 kDa.

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

## DATA




HAS3 (G-12): sc-365322. Western blot analysis of HAS3 expression in non-transfected: sc-117752 (**A**) and human HAS3 transfected: sc-113978 (**B**) 293T whole cell lysates.



HAS3 (G-12): sc-365322. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules.

## SELECT PRODUCT CITATIONS


1. Hasegawa, K., et al. 2022. 4-methylumebelliferone enhances radiosensitizing effects of radioresistant oral squamous cell carcinoma cells via hyaluronan synthase 3 suppression. Cells 11: 3780.


## 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.