

# HAS2 (H-60): sc-66916

## 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. HAS2 mRNA shows predominant expression in chondrocytes and cartilage. The human HAS2 gene maps to chromosome 8q24.13.

## REFERENCES

- Spicer, A.P., et al. 1997. Chromosomal localization of the human and mouse hyaluronan synthase genes. *Genomics* 41: 493-497.
- Itano, N., et al. 1999. Three isoforms of mammalian hyaluronan synthases have distinct enzymatic properties. *J. Biol. Chem.* 274: 25085-25092.
- Jacobson, A., et al. 2000. Expression of human hyaluronan synthases in response to external stimuli. *Biochem. J.* 348: 29-35.
- Ijuin, C., et al. 2001. Regulation of hyaluronan synthase gene expression in human periodontal ligament cells by tumour necrosis factor  $\alpha$ , interleukin- $1\beta$  and interferon- $\gamma$ . *Arch. Oral Biol.* 46: 767-772.
- Recklies, A.D., et al. 2001. Differential regulation and expression of hyaluronan synthases in human articular chondrocytes, synovial cells and osteosarcoma cells. *Biochem. J.* 354: 17-24.

## CHROMOSOMAL LOCATION

Genetic locus: HAS2 (human) mapping to 8q24.13; Has2 (mouse) mapping to 15 D1.

## SOURCE

HAS2 (H-60) is a rabbit polyclonal antibody raised against amino acids 121-180 mapping within an internal region of HAS2 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.

## 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.

## APPLICATIONS

HAS2 (H-60) is recommended for detection of HAS2 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 (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).

HAS2 (H-60) is also recommended for detection of HAS2 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for HAS2 siRNA (h): sc-45328, HAS2 siRNA (m): sc-45329, HAS2 shRNA Plasmid (h): sc-45328-SH, HAS2 shRNA Plasmid (m): sc-45329-SH, HAS2 shRNA (h) Lentiviral Particles: sc-45328-V and HAS2 shRNA (m) Lentiviral Particles: sc-45329-V.

Molecular Weight of HAS2: 63 kDa.

Positive Controls: mouse embryo extract: sc-364239.

## 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.

## SELECT PRODUCT CITATIONS

- Klagas, I., et al. 2009. Decreased hyaluronan in airway smooth muscle cells from patients with asthma and COPD. *Eur. Respir. J.* 34: 616-628.
- Cermák, V., et al. 2010. The transcription factor EGR1 regulates metastatic potential of v-src transformed sarcoma cells. *Cell. Mol. Life Sci.* 67: 3557-3568.
- 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.
- Galloway, J.L., et al. 2013. The control and importance of hyaluronan synthase expression in palatogenesis. *Front. Physiol.* 4: 10.
- Raheem, K.A., et al. 2013. Regulation of the hyaluronan system in ovine endometrium by ovarian steroids. *Reproduction* 145: 491-504.



Try **HAS2 (A-7): sc-514737** or **HAS2 (C-5): sc-365263**, our highly recommended monoclonal alternatives to HAS2 (H-60). Also, for AC, HRP, FITC, PE, Alexa Fluor<sup>®</sup> 488 and Alexa Fluor<sup>®</sup> 647 conjugates, see **HAS2 (A-7): sc-514737**.