

# SOSTDC1 (Y-14): sc-162253

## BACKGROUND

SOSTDC1 (sclerostin domain-containing protein 1), also known as USAG1, CDA019 or ECTODIN, is a 206 amino acid secreted protein that is highly expressed in kidney and weakly in lung. Belonging to the sclerostin family, SOSTDC1 may be involved in the onset of endometrial receptivity for implantation and sensitization for the decidual cell reaction. SOSTDC1 enhances Wnt signaling and inhibits TGF $\beta$  signaling. It is suggested that SOSTDC1 functions as a bone morphogenetic protein (BMP) antagonist. SOSTDC1 directly associates with BMPs, prohibiting them from binding their receptors, thereby regulating BMP signaling during cellular proliferation, differentiation and programmed cell death. SOSTDC1 contains one CTCK (C-terminal cysteine knot-like) domain.

## REFERENCES

1. Löwik, C.W. and van Bezooijen, R.L. 2006. Wnt signaling is involved in the inhibitory action of sclerostin on BMP-stimulated bone formation. *J. Musculoskelet. Neuronal Interact.* 6: 357.
2. Yanagita, M. 2006. Modulator of bone morphogenetic protein activity in the progression of kidney diseases. *Kidney Int.* 70: 989-993.
3. Murashima-Suginami, A., et al. 2007. Rudiment incisors survive and erupt as supernumerary teeth as a result of USAG-1 abrogation. *Biochem. Biophys. Res. Commun.* 359: 549-555.
4. Maeda, K., et al. 2007. Expression of uterine sensitization-associated gene-1 (USAG-1) in the mouse uterus during the peri-implantation period. *J. Reprod. Dev.* 53: 931-936.
5. Murashima-Suginami, A., et al. 2008. Enhanced BMP signaling results in supernumerary tooth formation in USAG-1 deficient mouse. *Biochem. Biophys. Res. Commun.* 369: 1012-1016.
6. Tanaka, M., et al. 2008. Expression of BMP-7 and USAG-1 (a BMP antagonist) in kidney development and injury. *Kidney Int.* 73: 181-191.
7. Munne, P.M., et al. 2009. Tinkering with the inductive mesenchyme: SOSTDC1 uncovers the role of dental mesenchyme in limiting tooth induction. *Development* 136: 393-402.

## CHROMOSOMAL LOCATION

Genetic locus: SOSTDC1 (human) mapping to 7p21.1; Sostdc1 (mouse) mapping to 12 A3.

## SOURCE

SOSTDC1 (Y-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of SOSTDC1 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.

Blocking peptide available for competition studies, sc-162253 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

SOSTDC1 (Y-14) is recommended for detection of SOSTDC1 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

SOSTDC1 (K-18) is also recommended for detection of SOSTDC1 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for SOSTDC1 siRNA (h): sc-89697, SOSTDC1 siRNA (m): sc-153686, SOSTDC1 shRNA Plasmid (h): sc-89697-SH, SOSTDC1 shRNA Plasmid (m): sc-153686-SH, SOSTDC1 shRNA (h) Lentiviral Particles: sc-89697-V and SOSTDC1 shRNA (m) Lentiviral Particles: sc-153686-V.

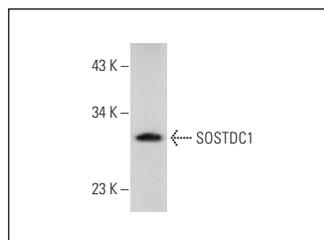
Molecular Weight of SOSTDC1: 23 kDa.

Positive Controls: human breast extract: sc-363753.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



SOSTDC1 (Y-14): sc-162253. Western blot analysis of SOSTDC1 expression in human breast tissue extract.

## 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.