

# NOTO (G-12): sc-168781

## BACKGROUND

NOTO (notochord homeobox) is a 251 amino acid nuclear protein containing one homeobox DNA-binding domain. NOTO is considered a transcription regulator that acts downstream of both HNF-3 $\beta$  and T during notochord development. NOTO is required for node morphogenesis and for cilia formation in the posterior notochord (PNC). Essential for the expression of various components important for axonemal assembly and function, NOTO plays an important role in regulating axial versus paraxial cell fate. NOTO is encoded by a gene located on human chromosome 2p13.2. Chromosome 2 houses over 1,400 genes and comprises nearly 8% of the human genome. Harlequin ichthyosis, a rare and morbid skin deformity, is associated with mutations in the ABCA12 gene, while the lipid metabolic disorder sitosterolemia is associated with defects in the ABCG5 and ABCG8 genes. Additionally, an extremely rare recessive genetic disorder, Alström syndrome, is caused by mutations in the ALMS1 gene, which maps to chromosome 2.

## REFERENCES

- Melby, A.E., et al. 1997. Spatial regulation of floating head expression in the developing notochord. *Dev. Dyn.* 209: 156-165.
- Gritsman, K., et al. 2000. Nodal signaling patterns the organizer. *Development* 127: 921-932.
- Martinelli, C., et al. 2004. Expression pattern of the homeobox gene Not in the basal metazoan *Trichoplax adhaerens*. *Gene Expr. Patterns* 4: 443-447.
- Abdelkhalek, H.B., et al. 2004. The mouse homeobox gene Not is required for caudal notochord development and affected by the truncate mutation. *Genes Dev.* 18: 1725-1736.
- Beckers, A., et al. 2007. The mouse homeobox gene Noto regulates node morphogenesis, notochordal ciliogenesis, and left right patterning. *Proc. Natl. Acad. Sci. USA* 104: 15765-15770.
- Sand, F.W., et al. 2011. Growth-limiting role of endothelial cells in endoderm development. *Dev. Biol.* 352: 267-277.
- Winzi, M.K., et al. 2011. Isolation and characterization of node/notochord-like cells from mouse embryonic stem cells. *Stem Cells Dev.* 20:1817-1827.

## CHROMOSOMAL LOCATION

Genetic locus: NOTO (human) mapping to 2p13.2.

## SOURCE

NOTO (G-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of NOTO 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-168781 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-168781 X, 200  $\mu$ g/0.1 ml.

## APPLICATIONS

NOTO (G-12) is recommended for detection of NOTO of 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).

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

Suitable for use as control antibody for NOTO siRNA (h): sc-94333, NOTO shRNA Plasmid (h): sc-94333-SH and NOTO shRNA (h) Lentiviral Particles: sc-94333-V.

NOTO (G-12) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

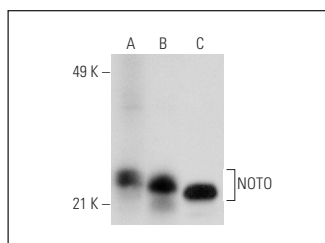
Molecular Weight of NOTO: 27 kDa.

Positive Controls: human bladder extract: sc-363751, human brain tissue extract or human spinal cord tissue extract.

## 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



NOTO (G-12): sc-168781. Western blot analysis of NOTO expression in human spinal cord (A), human brain (B) and human bladder (C) tissue extracts.

## 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.