

# OTP (S-12): sc-107284

## BACKGROUND

Homeodomain (HD) genes are helix-turn-helix transcription factors that play key roles in the specification of cell fates. OTP (orthopedia homeobox) is a 325 amino acid nuclear protein belonging to the paired homeobox family and Bicoid subfamily. OTP is expressed in neurons, which give rise to the paraventricular (PVN), supraoptic (SON), anterior periventricular (aPV) and arcuate (ARN) nuclei. Containing a homeobox DNA-binding domain and a OAR domain, OTP is suggested to be involved in the differentiation of hypothalamic neuroendocrine cells. At early embryonic stages in mice, the expression of SIM2 is downregulated in the absence of OTP, indicating a potential role for OTP as an upstream regulator of SIM2. OTP is highly conserved in evolution and is encoded by a gene located on human chromosome 5, which contains 181 million base pairs and comprises nearly 6% of the human genome.

## REFERENCES

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2. Swaab, D.F. 1995. Development of the human hypothalamus. *Neurochem. Res.* 20: 509-519.
3. Umesonu, Y., et al. 1997. A planarian orthopedia homolog is specifically expressed in the branch region of both the mature and regenerating brain. *Dev. Growth Differ.* 39: 723-727.
4. Acampora, D., et al. 1999. Progressive impairment of developing neuroendocrine cell lineages in the hypothalamus of mice lacking the Orthopedia gene. *Genes Dev.* 13: 2787-2800.
5. Lin, X., et al. 1999. Identification, chromosomal assignment, and expression analysis of the human homeodomain-containing gene Orthopedia (OTP). *Genomics* 60: 96-104.
6. Wang, W., et al. 2000. The murine OTP homeobox gene plays an essential role in the specification of neuronal cell lineages in the developing hypothalamus. *Dev. Biol.* 227: 432-449.
7. Walldorf, U., et al. 2000. Homeobrain, a novel paired-like homeobox gene is expressed in the *Drosophila* brain. *Mech. Dev.* 96: 141-144.
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9. Cavalieri, V., et al. 2007. Regulatory sequences driving expression of the sea urchin Otp homeobox gene in oral ectoderm cells. *Gene Expr. Patterns* 7: 124-130.

## CHROMOSOMAL LOCATION

Genetic locus: OTP (human) mapping to 5q14.1; Otp (mouse) mapping to 13 D1.

## SOURCE

OTP (S-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of OTP of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-107284 P, (100 µg 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-107284 X, 200 µg/0.1 ml.

## APPLICATIONS

OTP (S-12) is recommended for detection of OTP of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

OTP (S-12) is also recommended for detection of OTP in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for OTP siRNA (h): sc-91680, OTP siRNA (m): sc-151348, OTP shRNA Plasmid (h): sc-91680-SH, OTP shRNA Plasmid (m): sc-151348-SH, OTP shRNA (h) Lentiviral Particles: sc-91680-V and OTP shRNA (m) Lentiviral Particles: sc-151348-V.

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

Molecular Weight of OTP: 34 kDa.

## 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) 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.

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.