

# ODC (N-15): sc-21515

## BACKGROUND

Ornithine decarboxylase (ODC) is an enzyme that performs the first step in polyamine biosynthesis by converting ornithine to putrescine and CO<sub>2</sub>. ODC plays an important role in diverse biological processes, including cell growth, differentiation, transformation and apoptosis. The Sp1, c-Myc and c-Fos genes function as transactivators and ZBP-89 as a transrepressor of the ODC promoter. Overexpression of the ODC gene plays important roles in cell proliferation and the development of cancer. High levels of protein binding in the ODC promoter are implicated to the elevated constitutive expression of this gene. Elevated polyamine levels lead to downregulation of ODC activity by enhancing the translation of antizyme mRNA, resulting in subsequent binding of antizyme to ODC monomers to target ODC for proteolysis by the 26S Proteasome. DFMO (DL- $\alpha$ -Difluoromethylornithine) is an irreversible inhibitor of ODC which can induce apoptosis and inhibits cell growth. ODC is also associated with angiogenesis, and ODC-overexpressing cells exhibit suppressed expression of Type XVIII Collagen and endostatin, suggesting that overexpression of ODC facilitates endothelial proliferation by suppressing endostatin expression. The ODC gene maps to human chromosome 2p25.1.

## REFERENCES

1. Yang-Feng, T.L., et al. 1987. Ribonucleotide reductase M2 subunit sequences mapped to four different chromosomal sites in humans and mice: functional locus identified by its amplification in hydroxyurea-resistant cell lines. *Genomics* 1: 77-86.
2. Pegg, A.E. 1988. Polyamine metabolism and its importance in neoplastic growth and as a target for chemotherapy. *Cancer Res.* 48: 759-774.

## CHROMOSOMAL LOCATION

Genetic locus: ODC1 (human) mapping to 2p25.1; Odc1 (mouse) mapping to 12 A1.1.

## SOURCE

ODC (N-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of ODC 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.

Available as agarose conjugate for immunoprecipitation, sc-21515 AC, 500  $\mu$ g/0.25 ml agarose in 1 ml.

Blocking peptide available for competition studies, sc-21515 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## 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

ODC (N-15) is recommended for detection of ODC 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), 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).

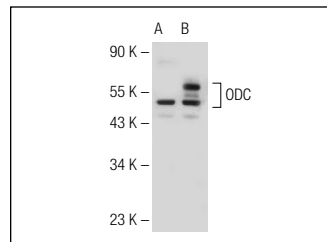
ODC (N-15) is also recommended for detection of ODC in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for ODC siRNA (h): sc-43982, ODC siRNA (m): sc-44573, ODC shRNA Plasmid (h): sc-43982-SH, ODC shRNA Plasmid (m): sc-44573-SH, ODC shRNA (h) Lentiviral Particles: sc-43982-V and ODC shRNA (m) Lentiviral Particles: sc-44573-V.

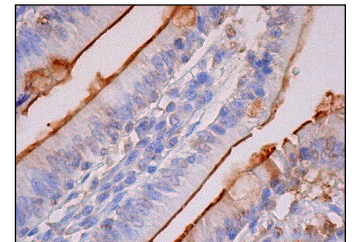
Molecular Weight of ODC: 53 kDa.

Positive Controls: ODC (h): 293T Lysate: sc-170296, C32 whole cell lysate: sc-2205 or SK-MEL-28 cell lysate: sc-2236.

## DATA



ODC (N-15): sc-21515. Western blot analysis of ODC expression in non-transfected: sc-117752 (A) and human ODC transfected: sc-170296 (B) 293T whole cell lysates.



ODC (N-15): sc-21515. Immunoperoxidase staining of formalin fixed, paraffin-embedded human small intestine tissue showing apical membrane staining of glandular cells.

## SELECT PRODUCT CITATIONS

1. Bussiere, F.I., et al. 2005. Spermine causes loss of innate immune response to *Helicobacter pylori* by inhibition of inducible nitric-oxide synthase translation. *J. Biol. Chem.* 280: 2409-2412.
2. Wallick, C., et al. 2005. Key role for p27Kip1, retinoblastoma protein Rb, and MYCN in polyamine inhibitor-induced G<sub>1</sub> cell cycle arrest in MYCN-amplified human neuroblastoma cells. *Oncogene* 24: 5606-5618.
5. Lefèvre, P.L., et al. 2011. Polyamines are implicated in the emergence of the embryo from obligate diapause. *Endocrinology* 152: 1627-1639.


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Try **ODC (E-6): sc-398116** or **ODC (G-10): sc-390366**, our highly recommended monoclonal alternatives to ODC (N-15).