SANTA CRUZ BIOTECHNOLOGY, INC.

ODC (H-71): sc-33539

SANTA CRUZ BIOTECHNOLOGY
The Power to Question

BACKGROUND

Ornithine decarboxylase (ODC) is an enzyme that performs the first step in polyamine biosynthesis by converting ornithine to putrescine and CO_2. 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 Proteosome. DFMO (DL-α-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 chromosme 2p25.1.

REFERENCES

1. Tabor, C.W. and Tabor, H. 1984. Polyamines. Annu. Rev. Biochem. 53: 749-790.
2. 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.
3. Pegg, A.E. 1988. Polyamine metabolism and its importance in neoplastic growth and as a target for chemotherapy. Cancer Res. 48: 759-774.
4. Heby, O., et al. 1990. Molecular genetics of polyamine synthesis in eucaryotic cells. Trends Biochem. Sci. 15: 153-158.

CHROMOSOMAL LOCATION

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

SOURCE

ODC (H-71) is a rabbit polyclonal antibody raised against amino acids 391-461 mapping at the C-terminus of ODC 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.

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 (H-71) 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 µg per 100-500 µg 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).

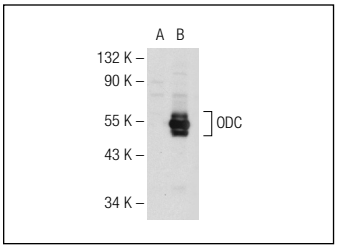
ODC (H-71) is also recommended for detection of ODC in additional species, including equine and canine.

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.

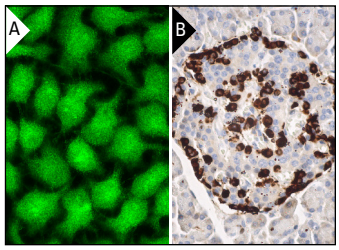
Molecular Weight of ODC: 53 kDa.

Positive Controls: ODC (h): 293T Lysate: sc-170296, K-562 nuclear extract: sc-2130 or SK-MEL-28 cell lysate: sc-2236.

DATA



ODC (H-71): sc-33539. Western blot analysis of ODC expression in non-transfected: sc-117752 (**A**) and human ODC transfected: sc-170296 (**B**) 293T whole cell lysates.



ODC (H-71): sc-33539. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of subset of cells in Islets of Langerhans (**B**).

SELECT PRODUCT CITATIONS

1. Calvisi, D.F., et al. 2007. Altered methionine metabolism and global DNA methylation in liver cancer: relationship with genomic instability and prognosis. Int. J. Cancer 121: 2410-2420.
2. Gürkan, A.C., et al. 2013. Inhibition of polyamine oxidase prevented cyclin-dependent kinase inhibitor-induced apoptosis in HCT 116 colon carcinoma cells. Apoptosis 18: 1536-1547.
3. Obakan, P., et al. 2014. Activation of polyamine catabolic enzymes involved in diverse responses against epibrassinolide-induced apoptosis in LNCaP and DU145 prostate cancer cell lines. Amino Acids 46: 553-564.

MONOS Satisfaction Guaranteed

Try **ODC (E-6): sc-398116** or **ODC (G-10): sc-390366**, our highly recommended monoclonal alternatives to ODC (H-71).