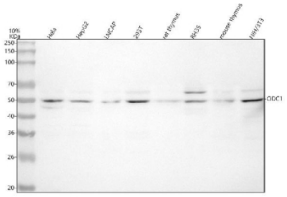
ODC1 Antibody / Ornithine decarboxylase 1 (FY12209)

Catalog No.	Formulation	Size
FY12209	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	P11926
Applications	Western Blot : 0.25-0.5ug/ml ELISA : 0.1-0.5ug/ml
Limitations	This ODC1 antibody is available for research use only.



Western blot analysis of ODC1 using anti-ODC1 antibody. Lane 1: human Hela whole cell lysates, Lane 2: human HepG2 whole cell lysates, Lane 3: human LNCAP whole cell lysates, Lane 4: human 293T whole cell lysates, Lane 5: rat thymus tissue lysates, Lane 6: rat RH35 whole cell lysates, Lane 7: mouse NIH/3T3 whole cell lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-ODC1 antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using enhanced chemiluminescent. The expected band size for ODC1 is at 51 kDa (active form) and 55 kDa (modified/conformational form).

Description

ODC1 antibody detects Ornithine decarboxylase 1, encoded by the ODC1 gene on chromosome 2p25.1. ODC1 antibody is widely used in research on polyamine metabolism, cell growth, and cancer biology. Ornithine decarboxylase 1 is the rate-limiting enzyme in polyamine biosynthesis, catalyzing the decarboxylation of ornithine to produce putrescine.

Polyamines are essential for DNA stabilization, transcription, and cell proliferation. Expression of ODC1 is tightly regulated by growth factors, hormones, and oncogenes, with high activity in rapidly dividing cells.

Structurally, ODC1 is a homodimeric enzyme of ~53 kDa per subunit, containing pyridoxal phosphate (PLP)-dependent catalytic sites. The enzyme undergoes rapid turnover regulated by antizyme-mediated degradation, ensuring tight control of polyamine levels. Conserved structural motifs ensure catalytic efficiency across species.

Functionally, ODC1 is critical for cell proliferation and tissue growth. By generating putrescine, it supports synthesis of spermidine and spermine, polyamines required for nucleic acid function and chromatin organization. Overexpression of ODC1 enhances proliferation and tumorigenesis, while inhibition by difluoromethylornithine (DFMO) blocks polyamine synthesis and reduces tumor growth. Researchers use ODC1 antibody to investigate polyamine metabolism, oncogene signaling, and therapeutic interventions.

Clinically, ODC1 overexpression is observed in many cancers, including colon, prostate, and neuroblastoma. It is regulated by oncogenes such as MYC, linking ODC1 to tumorigenesis. Genetic polymorphisms in ODC1 influence cancer risk and response to chemoprevention strategies involving polyamine inhibitors. Beyond oncology, ODC1 has roles in wound healing, immune responses, and neurological function. NSJ Bioreagents supplies ODC1 antibody to support cancer research, metabolism studies, and therapeutic development.

Experimentally, ODC1 antibody is applied in western blotting to detect the ~53 kDa protein, in immunohistochemistry to assess expression in tumors, and in immunofluorescence microscopy to study subcellular distribution. Enzymatic assays combined with ODC1 antibody help correlate expression with catalytic activity.

Application Notes

Optimal dilution of the ODC1 antibody should be determined by the researcher.

Immunogen

E.coli-derived human ODC1 recombinant protein (Position: M1-H450) was used as the immunogen for the ODC1 antibody.

Storage

After reconstitution, the ODC1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.