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Antibodies to WW domain containing Oxidoreductases proteins

Anti-WW Oxidoreductase Type 3 (Wwox 3) Subtype selective antibodies Cat # WWOX-300P and WWOX-301AP

WW domain-containing oxidoreductase (Wwox) proteins belong to a family of proteins (Wwox 1–Wwox 8) that are involved in regulation of programmed cell death. Human Wwox gene encodes a putative tumor suppressor WW domain-containing oxidoreductase Wwox1 (also known as Wwox or FOR). Wwox expression has been shown in prostate, lung, breast and other cancers. In addition, numerous aberrant Wwox mRNA transcripts have been found in cancer cells. Wwox gene maps to the common fragile site FRA16D on chromosome 16q23.3-24.1, is altered in breast, esophageal, and ovarian cancer (2). Wwox transcripts with missing Wwox exons are noted in 7 primary tumors (7 of 27; 25.9%) and 5 of 8 cell lines. In addition, loss of heterozygosity at the Wwox locus was observed in 10 primary lung tumors (2).

Wwox1 is a pro-apoptotic protein. In response to stress or apoptotic stimuli, WOX1 became phosphorylated at Tyr33, which enabled its complex formation with activated p53 and JNK1. The p53/Wwox1 complex translocated to the mitochondria and further to the nuclei to mediate apoptosis. Wwox1 mutants, which were inactivated for nuclear translocation or Tyr33 phosphorylation, failed to induce apoptosis, indicating that activation of Wwox1 via Tyr33 phosphorylation, followed by nuclear translocation, is essential for inducing cell death. Wwox1 induced apoptosis synergistically with p53. In contrast, transiently activated JNK1 induced anti-apoptotic response, and this protective activity inhibited Wwox1-induced apoptosis. Taken together, Wwox1 is involved in stress and apoptotic responses, and is likely to regulate the activation of both p53 and JNK1. In murine fetuses, WOX1 was present prevalently in the brainstem, spinal cord and peripheral nerve bundles, but its expression decreased after birth. In parallel, the expression of WOX1, as determined by Western blotting, was significantly reduced in the brain stem and spinal cord of adult mice. Notably, high levels of WOX1 immunoreactivity was observed in the neural crest-derived structures such as cranial and spinal ganglia and cranial mesenchyme during the late fetal stage. In the adult brain, WOX1 is abundant in the epithelial cells of the choroids plexus and ependymal cells, while a low to moderate level of WOX1 is observed within white matter tracts, such as axonal profiles of the corpus callosum, striatum, optic tract, and cerebral peduncle (3). WOX2 is significantly downregulated in the neurons of AD hippocampi (4). A neuronal protective hormone, 17-estradiol, also increase the binding of WOX1 and GSK-3 with Tau.

The Wwox 3-selective antibodies were generated in rabbits against synthetic peptide (KVS LFW GWA RHR SLC) that is unique to wwox 3 protein. The Wwox 3 antibody can easily differentiate the two proteins based on their size. These antibodies have been affinity purified and characterized for applications noted in the specification sheet. Other related products include antibodies to SERHL, mucin, p14arf, src, Ras, CAB2, XTP4, Her 2, ACK1 etc. FabGennix Inc. also provides limited quantities of antigenic blocking peptides for Wwox1-101AP antibodies.

Catalog #	Description	Antigen/Positive control	Cross reactivity	Qty	Price
Wwox-300P	Rabbit Anti-Wwox 3 antibodies	Near C-terminal peptide	M, H	100 ul	\$205
Wwox-301AP	Affinity purified Wwox 3 antibodies	Near C-terminal peptide	M, H	100 ug	\$225
P-Wwox 3	C-terminal antigenic blocking peptide	C-terminal peptide	250 ug	150ul	\$95
PC-Wwox 3	Western blot positive control for Wwox 3	Ready-to-use solution	For 5 applications	150ul	\$95

R = rat; M = mouse; H = humans; R = rabbit * Actual volume is between 150-200 ul; WB, Western Blot analyses; IMM, Immunoprecipitation; IHC, Immunohistochemistry, n.d, not determine; * cross reactivity to other species have not been determined.

Immunogen: Synthetic peptides (KVS LFW GWA RHR SLC) conjugated to KLH for immunization.

Concentration: Wwox-300P and Wwox-301AP = IgG concentration 0.5-0.75 mg/ml.

Applications: ELISA: Antibody dilution 1:10,000 -100,000 for ELISA or DOT blot assay. W.B: n.d. IMM: n.d; IHC n.d.

Protocols: Standard protocol for various applications (Western blot; immunoprecipitation and immunohistochemistry) of this antibody is provided with the product specification sheet, however, FabGennix Inc. recommends investigators to optimize conditions for this antibody for a particular application.

Form/Storage: The antiserum is supplied in antibody stabilization buffer. For long-term storage of antibody, store at -20°C. FabGennix Inc. does not recommend storage of very dilute antibody solutions unless they are prepared in specially formulated multi use antibody dilution buffer (Cat # DiluOBuffer). Working solutions of antibodies in DiluOBuffer should be filtered through 0.45µ filter after every use for long-term storage.

References:

1. R. L. Friedman, S. P. Manly, M. McMahon, I. M. Kerr, and G. R. Stark, Cell, 38: 745-755, 1984. Yendamuri S, Kuroki T, Trapasso F, Henry AC, Dumon KR, Huebner K, Williams NN, Kaiser LR, Croce CM. WW domain containing oxidoreductase gene expression is altered in non-small cell lung cancer. Cancer Res. 2003 Feb 15;63(4):878-81.
2. Chang NS, Doherty J, Ensign A, Lewis J, Heath J, Schultz L, Chen ST, Oppermann U. Molecular mechanisms underlying WOX1 activation during apoptotic and stress responses. Biochem Pharmacol. 2003 Oct 15;66(8):1347-54. Related Articles, Links
3. Chang NS, Doherty J, Ensign A. JNK1 physically interacts with WW domain-containing oxidoreductase (WOX1) and inhibits WOX1-mediated apoptosis. J Biol Chem. 2003 Mar 14;278(11):9195-202. Epub 2003 Jan 06.
4. Sze CI, Su M, Pugazhenti S, Jambal P, Hsu LJ, Heath J, Schultz L, Chang NS. Downregulation of WOX1 induces Tau phosphorylation in vitro: A potential role in Alzheimer's disease. J Biol Chem. 2004 May 7 Epub 2004 May 04.

Note: Briefly centrifuge antibodies to collect liquid at the bottom. Aliquot in working volumes before long-term storing at -20°C. Repeated freeze/thaw may result in appearance of higher molecular weight immunoreactive bands.

* For users who may require large amounts of Wwox3 antibodies (Wwox-300P and Wwox-301AP), please enquire about bulk material discounts. Lot #: FGI*.*.AP2

This Product is for Research Use Only and is NOT intended for use in humans or clinical diagnosis.

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