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Anti-Aldehyde Oxidase Antibody

Catalog # AP51721

Product Information

Application	WB, IHC, IF/IC
Primary Accession	Q06278
Reactivity	Human, Mouse, Rat, Mk
Host	Rabbit
Clonality	Polyclonal
Calculated MW	147918

Additional Information

Gene ID	316
Other Names	AO; Aldehyde oxidase; Aldehyde oxidase 1; Azaheterocycle hydroxylase
Target/Specificity	KLH-conjugated synthetic peptide encompassing a sequence within the center region of human Aldehyde Oxidase. The exact sequence is proprietary.
Dilution	WB~~WB (1/500 - 1/1000) IHC~~1:100~500 IF/IC~~N/A
Format	Liquid in 0.42% Potassium phosphate, 0.87% Sodium chloride, pH 7.3, 30% glycerol, and 0.01% sodium azide.
Storage	Store at -20 °C.Stable for 12 months from date of receipt

Protein Information

Name	AOX1 (HGNC:553)
Synonyms	AO
Function	Primarily catalyzes oxidation reactions of a broad range of drug and xenobiotic substrates and participates in their metabolism through oxidative biotransformation (PubMed:14709625, PubMed:20444863, PubMed:22279051, PubMed:22996261, PubMed:23857892, PubMed:26322824, PubMed:26842593, PubMed:34415167, PubMed:7786031, PubMed:9224775). Oxidizes at least three structural types of substrates: aldehydes such as benzaldehyde, retinal, pyridoxal, and vanillin; aromatic azaheterocyclic compounds such as phthalazine, quinazoline and phenanthridine; and quaternary azaheterocyclic compounds such as 1-methylnicotinamide and nicotine imine (PubMed:14709625, PubMed:22279051, PubMed:22996261, PubMed:23857892, PubMed:26322824, PubMed:26842593, PubMed:34415167, PubMed:7786031, PubMed:9224775). Converts aldehydes to carboxylic acids, aromatic and quaternary azaheterocyclic compounds to lactams, typically by using

molecular oxygen as the terminal electron acceptor and producing hydrogen peroxide as a by-product (PubMed:14709625, PubMed:22279051, PubMed:22996261, PubMed:23857892, PubMed:26322824, PubMed:26842593, PubMed:34415167, PubMed:7786031, PubMed:9224775). Under some conditions, especially with electron-deficient substrates or limited oxygen, can also catalyze reduction reactions using N-methylnicotinamide, 2-hydroxypyrimidine or benzaldehyde as electron donor substrate (Probable) (PubMed:15720138). These reductive activities include N-O bond reductions in nitro groups (e.g., imidacloprid, IMI), hydroxamic acids, and oxazoles (e.g., zonisamide), as well as N-S bond reductions of sulfoxides (e.g., sulindac) (By similarity).

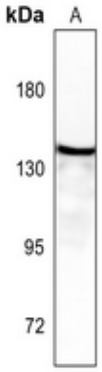
Cellular Location Cytoplasm

Tissue Location Abundant in liver, expressed in adipose tissue and at lower levels in lung, skeletal muscle, pancreas. In contrast to mice, no significant gender difference in AOX1 expression level (at protein level).

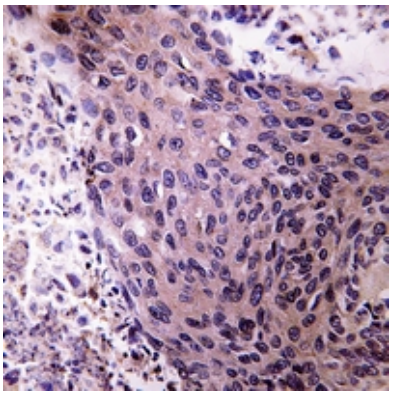
References

Wright R.M.,et al.Proc. Natl. Acad. Sci. U.S.A. 90:10690-10694(1993).
Wright R.M.,et al.Redox Rep. 3:135-144(1997).
Ichida K.,et al.Biochem. Biophys. Res. Commun. 282:1194-1200(2001).
Hillier L.W.,et al.Nature 434:724-731(2005).
Mural R.J.,et al.Submitted (JUL-2005) to the EMBL/GenBank/DDBJ databases.

Images

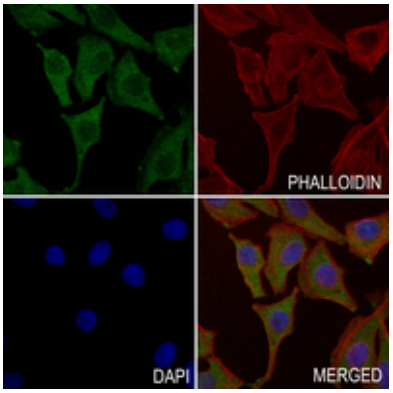


Western blot analysis of Aldehyde Oxidase expression in rat liver (A) whole cell lysates. (Predicted band size: 147 kD; Observed band size: 147 kD)



Immunohistochemical analysis of Aldehyde Oxidase staining in human lung cancer formalin fixed paraffin embedded tissue section. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0). The section was then incubated with the antibody at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.

Immunofluorescent analysis of Aldehyde Oxidase staining in MCF7 cells. Formalin-fixed cells were



permeabilized with 0.1% Triton X-100 in TBS for 5-10 minutes and blocked with 3% BSA-PBS for 30 minutes at room temperature. Cells were probed with the primary antibody in 3% BSA-PBS and incubated overnight at 4 °C in a hidified chamber. Cells were washed with PBST and incubated with a AF488-conjugated secondary antibody (green) in PBS at room temperature in the dark. Phalloidin - AF594 was used to stain Actin filaments (red). DAPI was used to stain the cell nuclei (blue).

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