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AOX1 Polyclonal Antibody

Catalog # AP68426

Product Information

Application	WB, IHC-P, IF, ICC, E
Primary Accession	Q06278
Reactivity	Human, Rat
Host	Rabbit
Clonality	Polyclonal
Calculated MW	147918

Additional Information

Gene ID	316
Other Names	AOX1; AO; Aldehyde oxidase
Dilution	WB~~Western Blot: 1/500 - 1/2000. Immunohistochemistry: 1/100 - 1/300. ELISA: 1/40000. Not yet tested in other applications. IHC-P~~N/A IF~~1:50~200 ICC~~N/A E~~N/A
Format	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.09% (W/V) sodium azide.
Storage Conditions	-20℃

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).

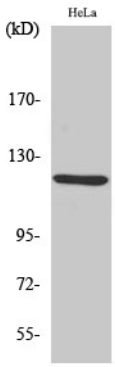
Cellular Location Cytoplasm

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).

Background

Oxidase with broad substrate specificity, oxidizing aromatic azaheterocycles, such as N1-methylnicotinamide, N- methylphthalazinium and phthalazine, as well as aldehydes, such as benzaldehyde, retinal, pyridoxal, and vanillin. Plays a key role in the metabolism of xenobiotics and drugs containing aromatic azaheterocyclic substituents. Participates in the bioactivation of prodrugs such as famciclovir, catalyzing the oxidation step from 6-deoxypenciclovir to penciclovir, which is a potent antiviral agent. Is probably involved in the regulation of reactive oxygen species homeostasis. May be a prominent source of superoxide generation via the one-electron reduction of molecular oxygen. Also may catalyze nitric oxide (NO) production via the reduction of nitrite to NO with NADH or aldehyde as electron donor. May play a role in adipogenesis.

Images



Western Blot analysis of various cells using AOX1 Polyclonal Antibody diluted at 1：2000

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.