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Cytochrome P450 17A1 Antibody

Purified Mouse Monoclonal Antibody (Mab)
Catalog # AP52768

Product Information

Application	WB
Primary Accession	P05093
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Isotype	IgG2b
Calculated MW	57371

Additional Information

Gene ID	1586
Other Names	20 lyase;CP17A_HUMAN;CPT7;CYP17;CYP17A1;CYPXVII;Cytochrome P450 17A1;Cytochrome P450 family 17;Cytochrome P450 family 17 subfamily A polypeptide 1;Cytochrome p450 subfamily XVII (steroid 17 alpha hydroxylase) adrenal hyperplasia;Cytochrome p450 XVIIA1; Cytochrome P450-C17;Cytochrome P450c17;OTTHUMP00000020382;P450 C17;P450c17;S17AH;Steroid 17 alpha hydroxylase/17, 20 lyase;Steroid 17 alpha monooxygenase;Steroid 17-alpha-hydroxylase/17;Steroid 17-alpha-monooxygenase.
Dilution	WB~~1:1000
Format	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide, pH 7.3.
Storage	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.

Protein Information

Name	CYP17A1 {ECO:0000303|PubMed:19793597, ECO:0000312|HGNC:HGNC:2593}
Function	A cytochrome P450 monooxygenase involved in corticoid and androgen biosynthesis (PubMed:22266943, PubMed:25301938, PubMed:27339894, PubMed:9452426). Catalyzes 17-alpha hydroxylation of C21 steroids, which is common for both pathways. A second oxidative step, required only for androgen synthesis, involves an acyl-carbon cleavage. The 17-alpha hydroxy intermediates, as part of adrenal glucocorticoids biosynthesis pathway, are precursors of cortisol (Probable) (PubMed:25301938, PubMed:9452426). Hydroxylates steroid hormones, pregnenolone and progesterone to form

17-alpha hydroxy metabolites, followed by the cleavage of the C17-C20 bond to form C19 steroids, dehydroepiandrosterone (DHEA) and androstenedione (PubMed:22266943, PubMed:25301938, PubMed:27339894, PubMed:36640554, PubMed:9452426). Has 16-alpha hydroxylase activity. Catalyzes 16-alpha hydroxylation of 17-alpha hydroxy pregnenolone, followed by the cleavage of the C17-C20 bond to form 16-alpha-hydroxy DHEA (PubMed:36640554). Also 16-alpha hydroxylates androgens, relevant for estriol synthesis (PubMed:25301938, PubMed:27339894). Mechanistically, uses molecular oxygen inserting one oxygen atom into a substrate, and reducing the second into a water molecule, with two electrons provided by NADPH via cytochrome P450 reductase (CPR; NADPH-ferrihemoprotein reductase) (PubMed:22266943, PubMed:25301938, PubMed:27339894, PubMed:9452426).

Cellular Location Endoplasmic reticulum membrane. Microsome membrane

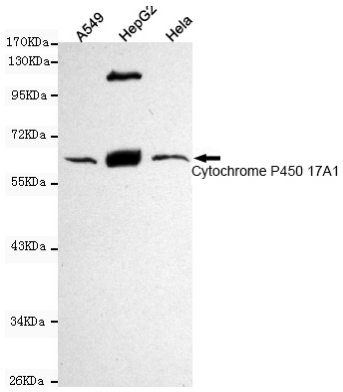
Background

Conversion of pregnenolone and progesterone to their 17- alpha-hydroxylated products and subsequently to dehydroepiandrosterone (DHEA) and androstenedione. Catalyzes both the 17-alpha-hydroxylation and the 17,20-lyase reaction. Involved in sexual development during fetal life and at puberty.

References

Chung B.-C.,et al.Proc. Natl. Acad. Sci. U.S.A. 84:407-411(1987).
Picado-Leonard J.,et al.DNA 6:439-448(1987).
Bradshaw K.D.,et al.Mol. Endocrinol. 1:348-354(1987).
Brentano S.T.,et al.Mol. Endocrinol. 4:1972-1979(1990).
Kagimoto M.,et al.Mol. Endocrinol. 2:564-570(1988).

Images



Western blot detection of Cytochrome P450 17A1 in Hela,HepG2 and A549 cell lysates using Cytochrome P450 17A1 mouse mAb (1:1000 diluted).Predicted band size:60KDa.Observed band size:60KDa.

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