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Anti-Cytochrome P450 17A1 Antibody

Catalog # AP51140

Product Information

Application	WB, IHC, IF/IC
Primary Accession	P05093
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Calculated MW	57371

Additional Information

Gene ID	1586
Other Names	CYP17; S17AH; Steroid 17-alpha-hydroxylase/17, 20 lyase; 17-alpha-hydroxyprogesterone aldolase; CYPXVII; Cytochrome P450 17A1; Cytochrome P450-C17; Cytochrome P450c17; Steroid 17-alpha-monooxygenase
Target/Specificity	KLH-conjugated synthetic peptide encompassing a sequence within the center region of human Cytochrome P450 17A1. 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

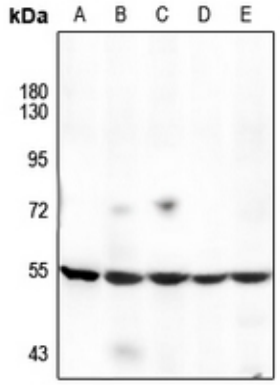
Name	CYP17A1 {ECO:0000303|PubMed:19793597, ECO:0000312|HGNC:HGNC:2593}
Function	A cytochrome P450 monooxygenase involved in corticoid and androgen biosynthesis (PubMed:22266943, PubMed:25301938, PubMed:27339894, PubMed:9452426). Catalyzes 17-alpha hydroxylation of C21 steroids, which is common for both 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

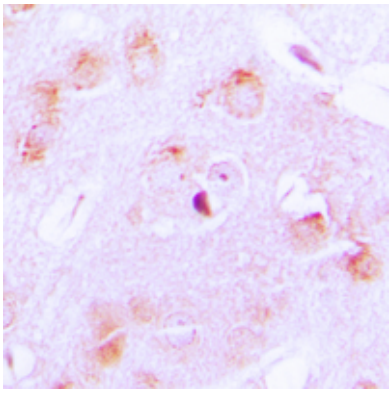
References

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

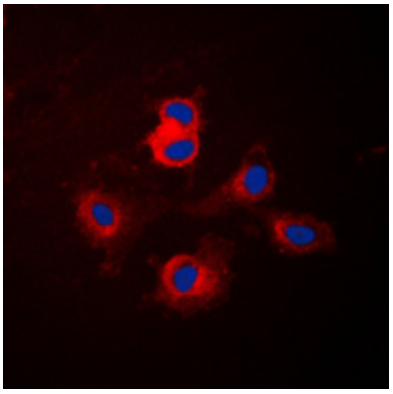


Western blot analysis of Cytochrome P450 17A1 expression in PC3 (A), U87MG (B), A2780 (C), PC12 (D), AML12 (E) whole cell lysates. (Predicted band size: 57 kD; Observed band size: 55 kD)



Immunohistochemical analysis of Cytochrome P450 17A1 staining in human brain 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 Cytochrome P450 17A1 staining in NIH3T3 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 humidified chamber. Cells were washed with PBST and incubated with a DyLight 594-conjugated secondary



antibody (red) in PBS at room temperature in the dark. DAPI was used to stain the cell nuclei (blue).

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