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#14217

CYP11A1 (D8F4F) Rabbit mAb

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New 08/14

Entrez-Gene ID #1583
UniProt ID #P05108

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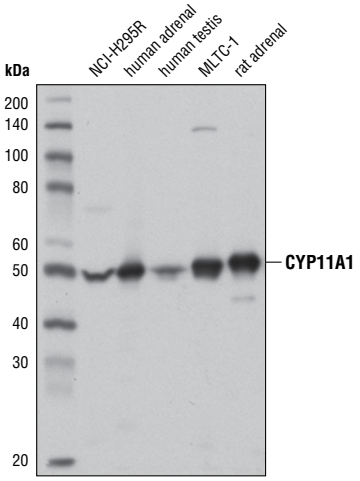
Applications	Species Cross-Reactivity*	Molecular Wt.	Isotype
W, IP, IF-IC Endogenous	H, M, R	50 kDa	Rabbit IgG**

Background: In steroidogenic tissues, such as the adrenal cortex, testis, ovary, and placenta, all steroids are synthesized from the common precursor cholesterol. Two families of steroidogenic enzymes, cytochrome P450 hydroxylase enzymes (CYP) and hydroxysteroid dehydrogenases (HSD), catalyze the production of most steroids. There are six distinct steroid hydroxylases, which are cytochrome P450 enzymes encoded by the steroidogenic *CYP* gene family (1). The cytochrome P450scc (cholesterol side-chain cleavage enzyme) encoded by *CYP11A1* catalyzes the first and rate-limiting step in steroidogenesis, conversion of cholesterol into pregnenolone (2).

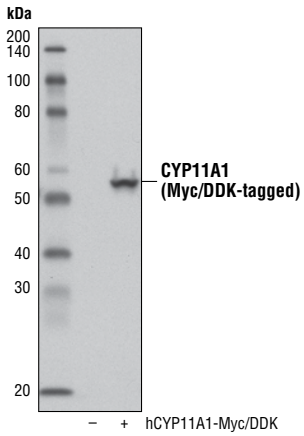
CYP11A1, located in the inner membrane of mitochondria, cooperates with two coenzymes, ferredoxin and ferredoxin reductase, to carry out three successive oxidation-reduction reactions of cholesterol (3-5). In the adrenal cortex, testis, and ovary, CYP11A1 expression is regulated by the cAMP-PKA pathway (6), and the transcription factor SF1/NR5A1 has been shown to play a central role in mediating the cAMP signal on the *CYP11A1* promoter within steroidogeneic cells of the adrenal cortex and gonads (7). Defects in CYP11A1 are the cause of adrenal insufficiency congenital with 46, XY sex reversal (AICSR), which is a rare disorder that can present as acute adrenal insufficiency in infancy or childhood (8,9).

Specificity/Sensitivity: CYP11A1 (D8F4F) Rabbit mAb recognizes endogenous levels of total CYP11A1 protein.

Source/Purification: Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the amino terminus of human CYP11A1 protein.



Western blot anlaysis of extracts from NCI-H295R cells, MLTC-1 cells, and various tissues using CYP11A1 (D8F4F) Rabbit mAb.



Western blot analysis of extracts from 293T cells, mock transfected (-) or transfected with a construct expressing Myc/DDK-tagged full-length human CYP11A1 protein (hCYP11A1-Myc/DDK; +), using CYP11A1 (D8F4F) Rabbit mAb.

Storage: Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. *Do not aliquot the antibody.*

***Species cross-reactivity is determined by western blot.**

****Anti-rabbit secondary antibodies must be used to detect this antibody.**

Recommended Antibody Dilutions:

Western blotting	1:1000
Immunoprecipitation	1:50
Immunofluorescence (IF-IC)	1:800

For product specific protocols and a complete listing of recommended companion products please see the product web page at www.cellsignal.com

Background References:

(1) Nelson, D.R. et al. (1993) DNA Cell Biol 12, 1-51.

(2) Richards, J.S. et al. (1987) *Recent Prog Horm Res* 43, 231-76.

(3) Hanukoglu, I. and Jefcoate, C.R. (1980) *J Biol Chem* 255, 3057-61.

(4) Hanukoglu, I. et al. (1981) *J Biol Chem* 256, 4329-35.

(5) Hanukoglu, I. et al. (1981) *J Biol Chem* 256, 4321-8.

(6) Hu, M.C. et al. (1991) *Biochem J* 274 (Pt 3), 813-7.

(7) Watanabe, N. et al. (1994) *Eur J Biochem* 222, 825-34.

(8) Tajima, T. et al. (2001) *J Clin Endocrinol Metab* 86, 3820-5.

(9) Katsumata, N. et al. (2002) *J Clin Endocrinol Metab* 87, 3808-13.

IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween®20 at 4°C with gentle shaking, overnight.

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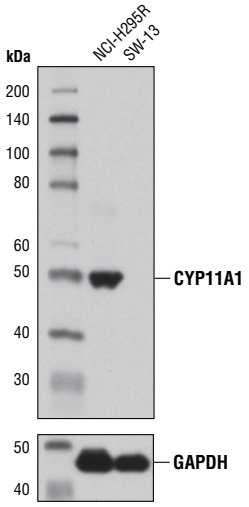
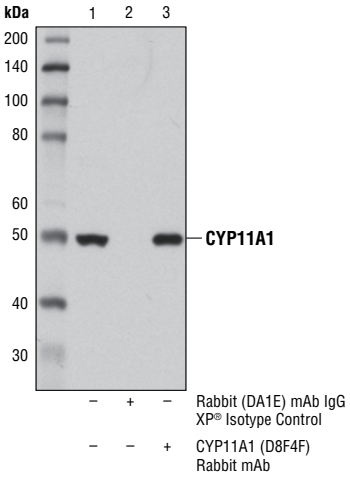
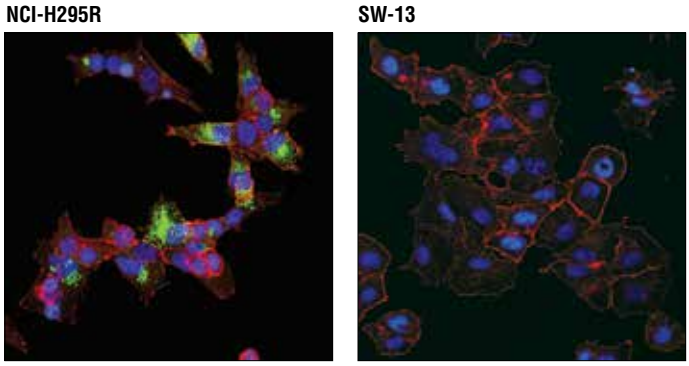


Western blot analysis of extracts from NCI-H295R (positive) and SW-13 (negative) cells using CYP11A1 (D8F4F) Rabbit mAb (upper) and GAPDH (D16H11) XP® Rabbit mAb #5174 (lower).



Immunoprecipitation of CYP11A1 from NCI-H295R cell extracts, using Rabbit (DA1E) mAb IgG XP® Isotype Control #3900 (lane 2) or CYP11A1 (D8F4F) Rabbit mAb. Lane 1 is 10% input. Western blot analysis was performed using CYP11A1 (D8F4F) Rabbit mAb.



Confocal immunofluorescent analysis of NCI-H295R (left, positive) and SW-13 (right, negative) cells, using CYP11A1 (D8F4F) Rabbit mAb (green). Actin filaments were labeled with DyLight™ 554 Phalloidin #13054 (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).