Active Cytochrome P450 17A1 (CYP17A1)

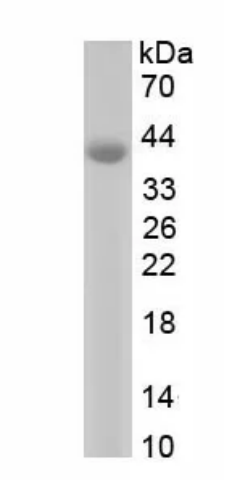
Catalog#:PEH12802

概述（Summary）

别称（Alternative Names）	S17aH; CPT7; P450C17; 17-Alpha-Hydroxylase; 17-alpha-hydroxyprogesterone aldolase/17,20-Lyase; Steroid 17-alpha-monooxygenase; Cytochrome P450,Family 17,Subfamily A,Polypeptide 1
纯度（Purity）	Greater than 90% as determined by reducing SDS-PAGE.
内毒素（Endotoxin level）	Please contact with the lab for this information
蛋白构建（Construction）	【Cys183-Thr508】
Accession #	P05093
表达宿主（Host）	E.coli
种属（Species）	Homo sapiens (Human)
预测分子量（Predicted MW）	40.6 kDa
制剂（Form）	Lyophilized from a 0.2 μm filtered solution of PBS, pH7.4, containing 0.01% SKL, 1mM DTT, 5% Trehalose and Proclin300.
运输方式（Shipping）	The product is shipped with ice bag. Upon receipt, store it immediately at the temperature listed below.
稳定性&储存（Stability &Storage）	12 months at -20°C to -80°C in lyophilized state.6 months at -20°C to -80°C under sterile conditions after reconstitution.7-10 days at 2°C to 8°C under sterile conditions after reconstitution.Please minimize freeze-thaw cycles.
复溶（Reconstitution）	Reconstitute in 10mM PBS (pH7.4) to a concentration of 0.1-1.0 mg/mL. Do not vortex.
背景介绍（References）	A cytochrome P450 monooxygenase involved in corticoid and androgen biosynthesis. 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). 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. 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. Also 16-alpha hydroxylates androgens, relevant for estriol synthesis. 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).

电泳图（SDS-PAGE image）



Greater than 90% as determined by reducing SDS-PAGE.

活性图（Bioactivity image）

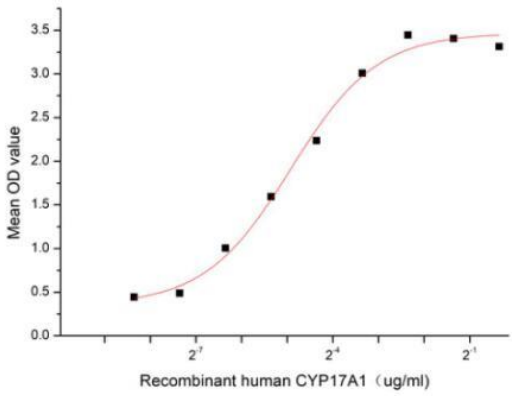


Figure 1. The binding activity of recombinant human CYP17A1 and recombinant human ErbB2

Microsomal human cytochrome P450 17A1 (CYP17A1, 17α-hydroxylase, 17,20-lyase) belongs to the cytochrome P450 super family, is expressed in the adrenals and gonads, with minor amounts in the brain, placenta, and heart. CYP17A1 enzyme operates at a key juncture of human steroidogenesis, controlling the levels of mineralocorticoids influencing blood pressure, glucocorticoids involved in immune and stress responses, and androgens and estrogens involved in development and

homeostasis of reproductive tissues. Receptor Tyrosine Protein Kinase erbB-2 (ErbB2) has been identified as an interactor of CYP17A1, thus a functional binding ELISA assay was conducted to detect the interaction of recombinant human CYP17A1 and recombinant human ErbB2. Briefly, CYP17A1 was diluted serially in PBS with 0.01% BSA (pH 7.4). Duplicate samples of 100 µl were then transferred to ErbB2-coated microtiter wells and incubated for 1h at 37℃. Wells were washed with PBST and incubated for 1h with anti-CYP17A1 pAb, then aspirated and washed 3 times. After incubation with HRP labelled secondary antibody for 1h at 37℃, wells were aspirated and washed 5 times. With the addition of substrate solution, wells were incubated 15-25 minutes at 37℃. Finally, add 50 µL stop solution to the wells and read at 450/630 nm immediately. The binding activity of recombinant human CYP17A1 and recombinant human ErbB2 was shown in Figure 1, the EC50 for this effect is 0.03 ug/mL.

注意事项（Note）

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