abcam

ab230327

Anti-CYP21A2 antibody

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.4 Preservative: 0.09% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Polyclonal
Immunogen	Synthetic Peptide within Human CYP21A2 aa 200-250 conjugated to Keyhole Limpet Haemocyanin. The exact immunogen used to generate this antibody is proprietary information. Database link P08686
Purification technique	Precipitation Ammonium Sulphate
Concentration	2 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/50 - 1/100
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/10 - 1/50
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Target data

See full target information CYP21A2

Function	A cytochrome P450 monooxygenase that plays a major role in adrenal steroidogenesis. Catalyzes the hydroxylation at C-21 of progesterone and 17alpha-hydroxyprogesterone to respectively form 11-deoxycorticosterone and 11-deoxycortisol, intermediate metabolites in the biosynthetic pathway of mineralocorticoids and glucocorticoids (PubMed:10602386, PubMed:16984992, PubMed:22014889, PubMed:25855791, PubMed:27721825). 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:25855791).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks

Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	CYP21A2 also known as steroid 21-hydroxylase is an enzyme that plays an important role in steroidogenesis. This enzyme is a part of the cytochrome P450 superfamily and has a molecular mass of approximately 55 kDa. It is mainly expressed in the adrenal cortex where it contributes to the synthesis of glucocorticoids and mineralocorticoids. CYP21A2 is responsible for transforming progesterone and 17-hydroxyprogesterone into 11-deoxycorticosterone and 11-deoxycortisol respectively by hydroxylation at the 21st carbon position.
Biological function summary	The enzyme activities of CYP21A2 are critical for maintaining homeostasis of steroid hormones. This protein does not function as part of a larger complex but works independently to facilitate the hydroxylation process that is essential for the production of cortisol and aldosterone. These steroid hormones regulate various functions including inflammation control metabolism blood pressure regulation and sodium retention.
Pathways	CYP21A2 is key in the steroid biosynthesis and adrenal corticosteroid synthesis pathways. It operates closely with other enzymes such as CYP11B1 and CYP11B2 which are responsible for further modifications in the production of corticosterone and aldosterone. These pathways ensure the appropriate levels of steroid hormones required for physiological stress response and electrolyte balance.
Associated diseases and disorders	Mutations or deficiencies in CYP21A2 often lead to conditions like congenital adrenal hyperplasia (CAH) and Addison's disease. In particular CAH stems from inadequate cortisol production resulting in adrenal gland-related complications. CYP21A2 deficiency is connected to heightened androgen levels leading to adrenal hyperplasia. Furthermore the protein's relationship with enzymes like CYP17A1 plays a role in managing the balance between various steroid hormones impacting disease outcomes.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

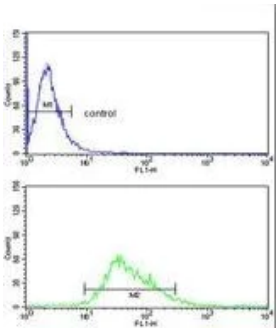
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

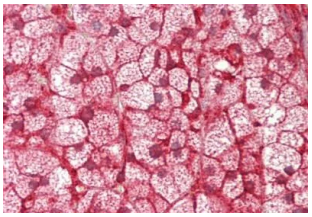
3 product images



Flow Cytometry (Intracellular) - Anti-CYP21A2 antibody (ab230327)

CYP21A2 Flow Cytometry (Intracellular) staining using rabbit Anti-CYP21A2 antibody

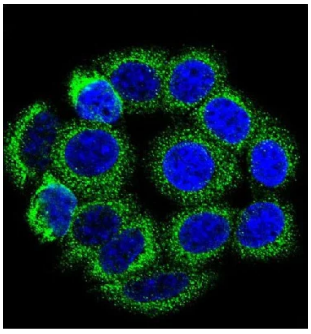
Intracellular flow cytometric analysis of MDA-MB231 (human breast adenocarcinoma cell line) cells labeling CYP21A2 with ab230327 at 1/10 dilution (bottom histogram) compared to a negative control cell (top histogram). FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CYP21A2 antibody (ab230327)

CYP21A2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-CYP21A2 antibody

Formalin-fixed, paraffin-embedded human adrenal tissue stained for CYP21A2 using ab230327 at 1/50 dilution in imunohistochemical analysis.



Immunocytochemistry/ Immunofluorescence - Anti-CYP21A2 antibody (ab230327)

CYP21A2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-CYP21A2 antibody

HEK-293 (human epithelial cell line from embryonic kidney) cells stained for CYP21A2 using ab230327 at 1/10 dilution, followed by Alexa Fluor 488-conjugated goat anti-rabbit lgG (green) in confocal immunofluorescence.
Nucelar counterstain: DAPI (blue).

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