

Aromatase (CYP19A) Activity Assay Kit (Fluorometric) ab273306

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Overview

Product name	Aromatase (CYP19A) Activity Assay Kit (Fluorometric)
Detection method	Fluorescent
Sample type	Cell Lysate, Tissue Lysate
Assay type	Enzyme activity (quantitative)
Assay duration	Multiple steps standard assay
Product overview	Aromatase Activity Assay Kit (Fluorometric) (ab273306) enables rapid measurement of native or recombinant aromatase activity in biological samples such as placental microsomes and S9 fractions.

The assay utilizes a fluorogenic substrate that is converted into a highly fluorescent metabolite detected in the visible range (Ex/Em = 488/527 nm), ensuring a high signal-to-background ratio with little interference by autofluorescence.

A highly selective aromatase inhibitor is provided for determination of aromatase activity in heterogeneous biological samples, where other CYP isozymes may contribute to substrate metabolism. The inhibitor displays greater than 100-fold selectivity for aromatase over other enzymes, ensuring targeted inhibition. Aromatase specific activity is calculated by running parallel reactions in the presence and absence of the inhibitor and subtracting any residual activity detected with the inhibitor present.

The kit contains a complete set of reagents sufficient for 50 sets of paired reactions (in the presence and absence of inhibitor) and can detect a minimum of 25 nU aromatase activity.

Notes This product is manufactured by BioVision, an Abcam company and was previously called K983 Aromatase (CYP19A) Activity Assay Kit (Fluorometric). K983-100 is the same size as the 100 test size of ab273306.

Platform Microplate

Properties

Storage instructions Store at -20°C. Please refer to protocols.

Components	100 tests	100 tests
β -NADP Stock	1 vial	1 vial
100X NADPH Generating System II	1 vial	1 vial
Aromatase Assay Buffer	1 x 100ml	1 x 100ml
Aromatase Inhibitor	1 vial	1 vial
Aromatase Substrate	1 vial	1 vial
Fluorescence Standard IV	1 x 50 μ l	1 x 50 μ l
Recombinant Human Aromatase	1 vial	1 vial

Function

Catalyzes the formation of aromatic C18 estrogens from C19 androgens.

Tissue specificity

Brain, placenta and gonads.

Involvement in disease

Defects in CYP19A1 are a cause of aromatase excess syndrome (AEXS) [MIM:139300]; also known as familial gynecomastia. AEXS is characterized by an estrogen excess due to an increased aromatase activity.

Defects in CYP19A1 are the cause of aromatase deficiency (AROD) [MIM:107910]. AROD is a rare disease in which fetal androgens are not converted into estrogens due to placental aromatase deficiency. Thus, pregnant women exhibit a hirsutism, which spontaneously resolves after post-partum. At birth, female babies present with pseudohermaphroditism due to virilization of extern genital organs. In adult females, manifestations include delay of puberty, breast hypoplasia and primary amenorrhoea with multicystic ovaries.

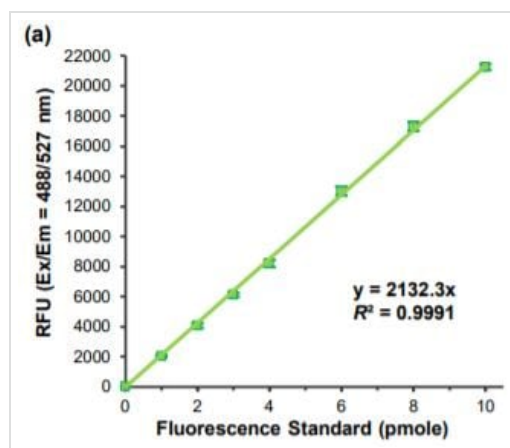
Sequence similarities

Belongs to the cytochrome P450 family.

Cellular localization

Membrane.

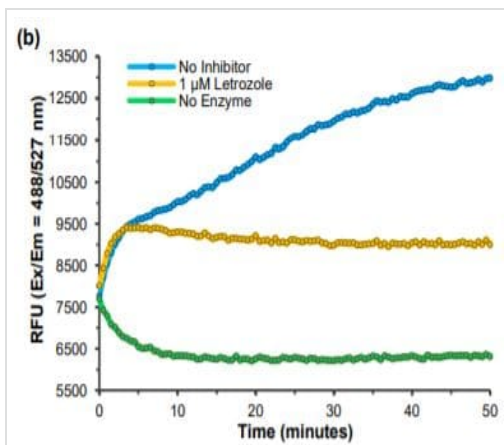
Images



Example standard curve

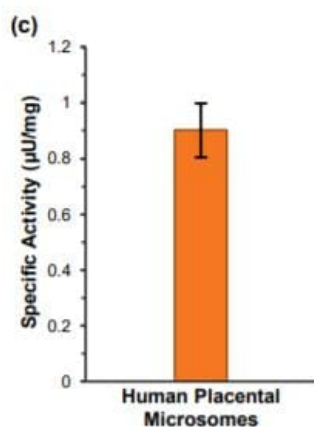
Standard curve of Aromatase Substrate metabolite fluorescence.

One mole of fluorescence standard corresponds to the metabolism of one mole of Aromatase Substrate.



Reaction Kinetics

Reaction kinetics of fluorogenic substrate metabolism in donor-pooled human placental microsomes (0.5 mg/mL) at 37°C in the presence and absence of the competitive aromatase inhibitor letrozole (the no inhibitor condition contained assay buffer with 0.2% acetonitrile as a solvent control).



Specific activity of aromatase in human placental microsomes samples

Specific activity of aromatase in human placental microsomes samples (mean ± SEM of four independent replicates). Assays were performed according to the kit protocol.

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