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Product datasheet

Complex II Enzyme Activity Microplate Assay Kit ab109908

2 Abreviews 102 References 3 Images

Overview

Product name	Complex II Enzyme Activity Microplate Assay Kit
Detection method	Colorimetric
Sample type	Cell Lysate, Tissue Lysate, Purified mitochondria
Assay type	Enzyme activity
Assay time	3h 00m
Species reactivity	**Reacts with:** Mouse, Rat, Cow, Human
Product overview	Complex II Enzyme Activity Microplate Assay Kit is designed for determining the Complex II activity in a human, mouse, rat or bovine sample. Each of the 96 wells in the kit has been coated with an anti-Complex II monoclonal antibody (mAb) which purifies the enzyme from a complex sample such as mitochondria, tissue homogenate or cell lysate. After this in-well purification the production of ubiquinol by the enzyme is coupled to the reduction of the dye DCPIP (2,6-diclorophenolindophenol) and a decreases in its absorbance at 600 nm, which in turn recycles the substrate ubiquinone.
Notes	Succinate, Ubiquinone 2, DCPIP and Phospholipids should be stored at -80°C. All other components should be stored at 4°C. **Related products** Review the **mitochondrial assay guide**, or the full **metabolism assay guide** to learn about more assays for metabolites, metabolic enzymes, mitochondrial function, and oxidative stress, and also how to assay metabolic function in live cells using your plate reader.
Platform	Microplate reader

Properties

Storage instructions	Please refer to protocols.

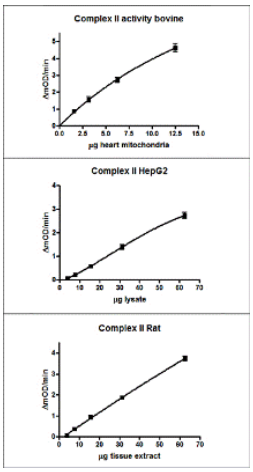
Components	96 tests
10X Blocking Solution	1 x 5ml
Detergent	2 x 1ml

Components	96 tests
20X Buffer	1 x 15ml
Complex II Activity Buffer	1 x 25ml
DCPIP/DCIP	1 x 250µl
Phospholipids	1 x 6ml
Pre-coated 96-well microplate (12 strips)	1 unit
Succinate	1 x 500µl
Ubiquinone 2	1 x 60µl

Relevance

Complex II is also called succinate ubiquinone oxidoreductase or more commonly succinate dehydrogenase complex. This complex is composed of four nuclear encoded subunits and contains a flavin (FAD), non-heme iron centers and a b-type cytochrome as prosthetic groups. It is both a component of the electron transport chain and an enzyme of the Krebs cycle. Complex II deficiencies are seen in OXPHOS genetic disease and found in a type of cancer called paraganglioma.

Images



- Complex II Enzyme Activity Microplate Assay Kit (ab109908)

Figure 2. This assay is compatible with different sample types such as mitochondria, tissue or cell lysates and in multiple species including human and rodent samples. Typical linear range data are shown for ab109908.

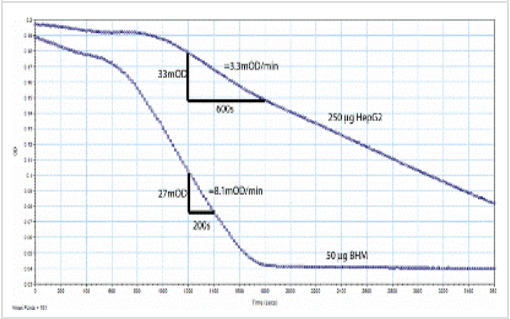


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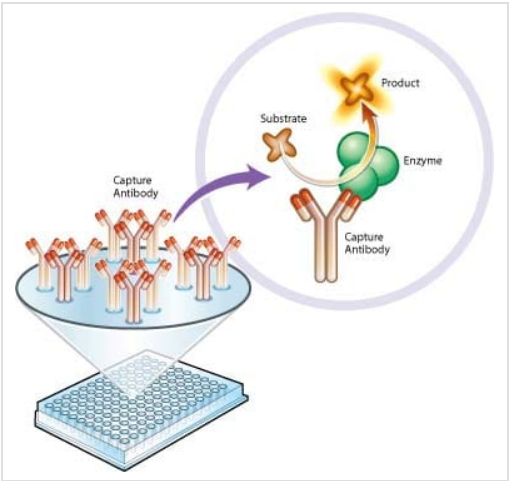
Figure 1. Example of raw data. Note the lag period before activity. Also note the activity of mitochondria (BHM, bovine heart mitochondria) is higher than whole cell lysate (HepG2, human hepatoblastoma) and the reaction ends at >1600 seconds because the substrates are used up.



Functional Studies - Complex II Enzyme Activity Microplate Assay Kit (ab109908)

Abcam's enzyme activity assays apply a novel approach, whereby target enzymes are first immunocaptured from tissue or cell samples before subsequent functional analysis. All of our ELISA kits utilize highly validated monoclonal antibodies and proprietary buffers, which are able to capture even very large enzyme complexes in their fully-intact, functionally-active states.

Capture antibodies are pre-coated in the wells of premium Nunc MaxiSorp™ modular microplates, which can be broken into 8-well strips. After the target has been immobilized in the well, substrate is added, and enzyme activity is analyzed by measuring the change in absorbance of either the substrate or the product of the reaction (depending upon which enzyme is being analyzed). By analyzing the enzyme's activity in an isolated context, outside of the cell and free from any other variables, an accurate measurement of the enzyme's functional state can be understood.

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