

Product datasheet

Glutathione Reductase (GR) Assay Kit ab83461

[29 References](#) [6 Images](#)

Overview

Product name	Glutathione Reductase (GR) Assay Kit
Detection method	Colorimetric
Sample type	Urine, Serum, Plasma, Other biological fluids, Tissue Extracts, Cell Lysate
Assay type	Enzyme activity
Sensitivity	> 0.1 mU/ml
Range	0.1 mU/ml - 40 mU/ml
Assay time	0h 40m
Product overview	Glutathione Reductase Assay Kit (ab83461) is a highly sensitive, simple, direct and HTS-ready colorimetric assay for measuring GR activity in biological samples. In the assay, GR reduces GSSG to GSH, which reacts with 5, 5'-Dithiobis (2-nitrobenzoic acid) (DTNB) to generate TNB2- (yellow color, λ_{max} = 405 nm). The assay can detect 0.1-40 mU/ml GR in various samples.

Since Glutathione Reductase has significantly higher concentrations in cells (mM range) compared to Thioredoxin Reductase (μM range), we predict that ab83461 will detect mostly GR activity in samples.

Notes This product is manufactured by BioVision, an Abcam company and was previously called K761 Glutathione Reductase Activity Colorimetric Assay Kit. K761-200 is the same size as the 200 test size of ab83461.

Glutathione Reductase (GR, EC 1.8.1.7) catalyzes the NADPH-dependent reduction of oxidized glutathione (GSSG) to reduced glutathione (GSH), which plays an important role in the GSH redox cycle that maintains adequate levels of reduced GSH. A high GSH/GSSG ratio is essential for protection against oxidative stress.

Related products

Review the [oxidative stress marker and assay guide](#) to learn about more assays for oxidative stress.

Platform Microplate reader

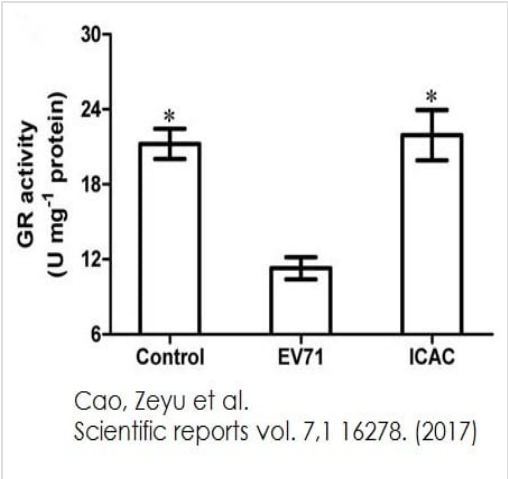
Properties

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

Components	200 tests
Assay Buffer XLI	1 x 100ml
Catalase	1 x 1ng
DTNB	1 vial
GR Positive Control	1 vial
GSSG	1 vial
NADPH Generating Mix	2 vials
Substrate V	1 x 1ml
TNB Standard	1 x 1ng

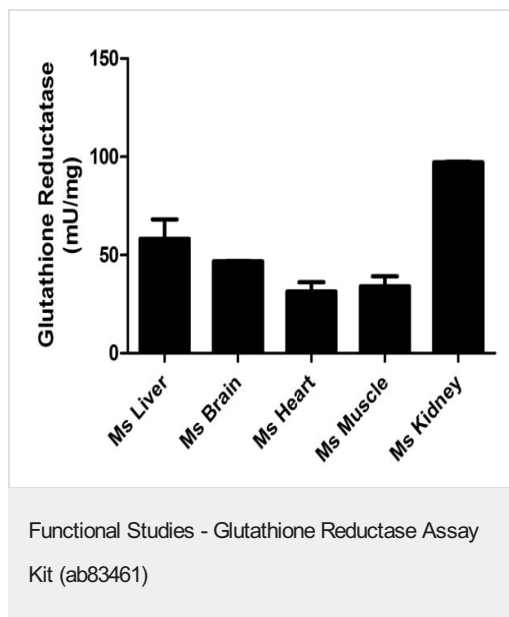
Relevance	Glutathione Reductase (GR, EC 1.8.1.7) catalyzes the NADPH-dependent reduction of oxidized glutathione (GSSG) to reduced glutathione (GSH), which plays an important role in the GSH redox cycle that maintains adequate levels of reduced GSH. A high GSH/GSSG ratio is essential for protection against oxidative stress.
Cellular localization	Cytoplasmic and Mitochondrial

Images

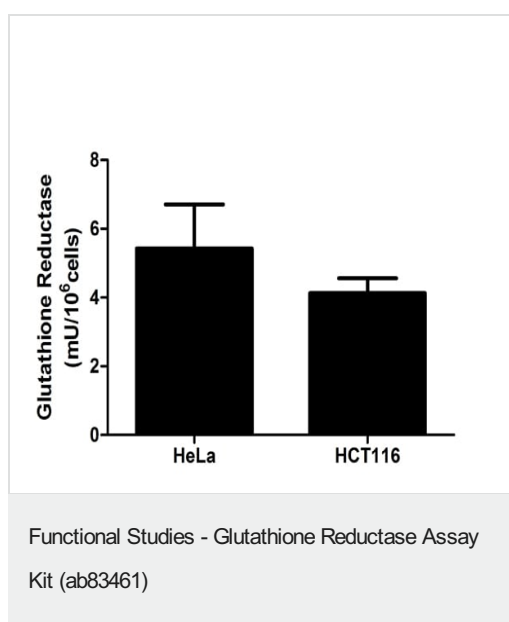


ICAC decreased the ROS level induced by EV71 infection via modulating the antioxidant enzymes involved in GSH metabolism. Infected (100 TCID₅₀ EV71) Vero cells were treated with medium or 100 μ M ICAC for 12 h. Uninfected cells were used as the control group. The antioxidant enzymes activities of the Vero cells were detected (n = 3). All results were expressed as the means \pm SEs. Asterisks indicate that the data significantly differ from the EV71 group at the P < 0.05 level according to one-way analysis of variance.

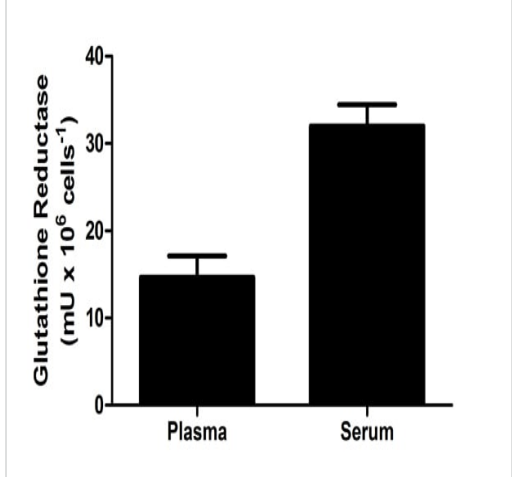
Functional Studies - Glutathione Reductase (GR)
Assay Kit (ab83461)
Cao, Zeyu et al., Scientific reports?vol. 7,1 16278., Fig 5,
doi:10.1038/s41598-017-16446-7



Glutathione reductase measured in mouse tissue lysates showing activity (mU) per mg of extracted protein ($T_1=2$ min; $T_2=30$ min).

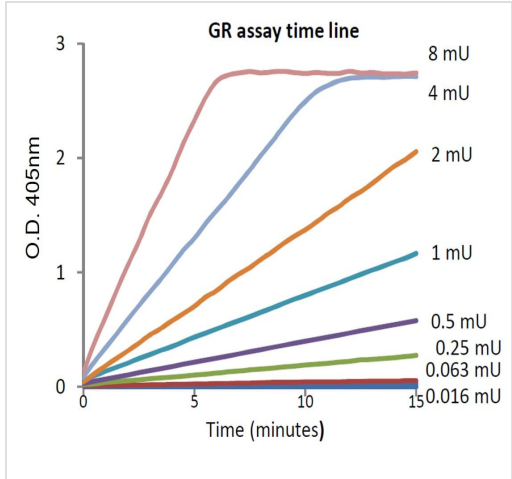


Glutathione reductase measured in cell lysates (mU) per 10^6 cells ($T_1=2$ min; $T_2=30$ min)



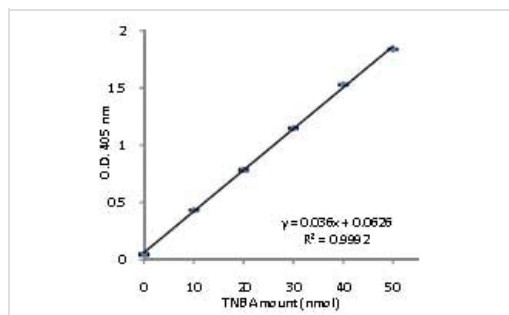
Glutathione reductase measured in human plasma and serum ($T_1=2$ min; $T_2=30$ min) showing activity (mU) per ml of tested sample. No activity was detected in saliva or urine.

Functional Studies - Glutathione Reductase Assay
Kit (ab83461)



Glutathione Reductase assay time line using ab83461.

Functional Studies - Glutathione Reductase Assay
Kit (ab83461)



TNB Standard Curve using ab83461.

Functional Studies - Glutathione Reductase Assay
Kit (ab83461)

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