

OxiSelect Glutathione Reductase Assay Kit

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CATALOG #
AAA44551

PRODUCT SYNONYMS

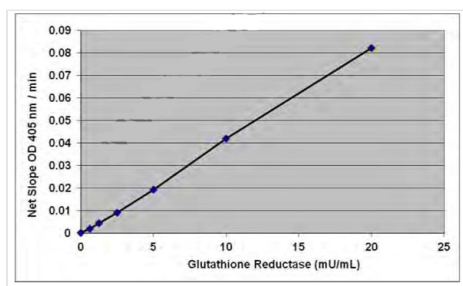
OxiSelect Glutathione Reductase; OxiSelect Glutathione Reductase Assay Kit; OxiSelect Glutathione Reductase assay kit

PRODUCT SPECIFICATIONS

Preparation and Storage

Upon receipt, store the NADPH at -80 degree C. Prepare single use aliquots and avoid multiple freeze/thaw cycles. Store the remaining kit components at 4 degree C.

IMAGES



Standard Curve (Sample)

ADDITIONAL INFORMATION

Related Product Information for OxiSelect Glutathione Reductase assay kit

Background: Glutathione reductase is a homodimeric enzyme that is a member of the flavoprotein disulfide oxidoreductases. It has an indirect impact in the prevention of oxidative damage in cells by helping to maintain intracellular reduced glutathione (GSH). Thus, measuring the activity of the enzyme is an indicator of oxidative stress. It is a ubiquitous enzyme that catalyzes the NADPH dependent reduction reaction of oxidized glutathione (GSSG) to reduced glutathione (GSH). Oxidized glutathione is reduced through a multi-step reaction in which glutathione reductase is reduced by NADPH, which in turn reacts with a GSSG molecule. This creates a disulfide interchange reaction that creates two GSH molecules and restores glutathione reductase to its oxidized form. Regenerated GSH is available to detoxify hydrogen peroxide. Maintenance of GSH is vital in oxidation-reduction processes as well as detoxification of hydrogen peroxide and organic peroxides brought on by inflammation in cells. The OxiSelect™ Glutathione Reductase Assay Kit is a quantitative assay for measuring glutathione reductase activity within plasma, erythrocytes, tissues, and cell lysates. Glutathione reductase activity is defined as 1 unit of enzyme reducing 1 umole oxidized glutathione (GSSG) per minute at pH 7.6 and 25 degree C. The kit employs a simple enzymatic recycling reaction for glutathione quantification where the reduction of a chromagen is correlated to glutathione reductase enzymatic activity. The kit has a detection sensitivity limit of approximately 0.6 mU/mL. Each kit provides sufficient reagents to perform up to 100 assays, including standard curve and unknown samples.

Principle of the Assay: The OxiSelect™ Glutathione Reductase Assay Kit is a quantitative assay for measuring the glutathione reductase activity within a sample. Glutathione Reductase reduces oxidized glutathione (GSSG) to reduced glutathione (GSH) in the presence of NADPH. Subsequently, the chromogen reacts with the thiol group of GSH to produce a colored compound that absorbs at 405 nm (Figure 1). The glutathione reductase content in unknown samples is determined by comparison with the predetermined glutathione reductase standard curve. The rate of chromophore production is proportional to the concentration of glutathione reductase activity within the sample. The rate can be determined from the absorbance change over time.

Product Categories/Family for OxiSelect Glutathione Reductase assay kit	Oxidative Stress/Damage ; Antioxidant Assays ; Glutathione Reductase Assay
References	1. Anderson, M. Glutathione in Free radicals, A Practical Approach. Oxford University Press, New York; 1996. 2. Halliwell, B, Gutteridge, J.M.C. Free Radicals in Biology and Medicine. Oxford University Press, New York; 1999. 3. Julius, M., et al. J. Clin. Epidemiol. (1994) 47: 1021-1026. 4. Mytilineou, C., et al. Parkinsonism Relat. Disord. (2002) 8: 385-387.

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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Online datasheet: <https://stage.aaabiotech.com/assay-kits/oxiselect-glutathione-reductase/44551>