



TREVIGEN®

Oxidative Damage

Trevigen offers a variety of kits for detection of oxidative damage, including:

Superoxide Dismutase (SOD) - Catalyzes the dismutation of the superoxide radical (O_2^-) into hydrogen peroxide (H_2O_2) and elemental oxygen (O_2), and as such, provides an important defense against the toxicity of superoxide radical. Superoxide ions, generated from the conversion of xanthine to uric acid and hydrogen peroxide by xanthine oxidase, converts NBT to NBT-diformazan. NBT-diformazan absorbs light at 550 nm. SOD reduces the superoxide ion concentration and thereby lowers the rate of NBT-diformazan formation. The kit contains the proper lysis buffer and the reagents needed for 100 experimental tests, 50 positive controls, and 50 negative controls.

Glutathione Reductase is an enzyme which catalyzes the reduction of oxidized glutathione (GSSG) to reduced glutathione (GSH). GSH is an important intracellular antioxidant that reacts with oxygen free radicals and organic peroxides and acts as a substrate for other detoxification enzymes such as glutathione peroxidase and glutathione S-transferase. The activity of glutathione reductase is an important measure of the antioxidant status of the cell. Glutathione reductase requires NADPH for its activity, resulting in the reduction of GSSG to GSH and the corresponding oxidation of NADPH to NADP. Trevigen's Glutathione Reductase Assay takes less than 6 minutes to perform and is based on the measurement of the loss in absorbance at 340 nm due to the conversion of NADPH to NADP+.

Glutathione Assay Kit utilizes an optimized enzymatic recycling method, using Glutathione reductase, for the quantification of Glutathione. The sulfhydryl group of Glutathione reacts with DTNB (5,5'-dithiobis-2-nitrobenzoic acid, Ellman's reagent) and produces a yellow colored 5-thio-2-nitrobenzoic acid (TNB). The mixed disulfide, GSTNB (between GSH and TNB) that is concomitantly produced, is reduced by Glutathione reductase to recycle the GSH and produce more TNB. The rate of TNB production is directly proportional to this recycling reaction which is in turn directly proportional to the concentration of GSH in the sample. Measurement of the absorbance of TNB at 405 or 414 nm provides an accurate estimation of Glutathione in a sample.

Glutathione Peroxidase is a tetramer of four identical subunits, with a molecular weight of 84,000. It requires selenium as a cofactor and contains a selenocysteine amino acid residue in the active site of each monomer that participates in the actual mechanism of the enzyme. Glutathione peroxidase (GP) is found in mammalian cells and helps to prevent lipid peroxidation of cell membranes by consuming free peroxide in the cell. Trevigen's Glutathione Peroxidase Assay Kit can be used to measure glutathione-dependent peroxidases in plasma, erythrocyte lysates, tissue homogenates, and cell lysates.

8-oxo-dG ELISA Kit is a competitive immunoassay for the detection and quantitation of 8-hydroxy-2'-deoxyguanosine (8-oxo-dG) in urine and serum samples. 8-oxo-dG has become a frequently used biomarker of oxidative DNA damage and oxidative stress. The kit features a 96 strip well plate pre-bound with 8-oxo-dG, an 8-oxo-dG monoclonal antibody, an enzyme-labeled secondary antibody, detection substrates and buffer to provide a complete, robust assay flexible to your experimental design.

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Ordering Information:

Description	Size	Catalog #
SOD Assay Kit	100 tests	7500-100-K
HT SOD Assay Kit	480 tests	7501-500-K
HT Glutathione Peroxidase Assay Kit	100 tests	7512-100-K
HT Glutathione Assay Kit	100 tests	7511-100-K
Glutathione Reductase Assay	100 tests	7510-100-K
HT Glutathione Reductase Assay Kit	480 tests	7513-500-K
HT 8-oxo-dG ELISA Kit	96 tests	4370-096-K

Features and Benefits:

Features	Benefits
96-well microplate formats for Glutathione Reductase and Superoxide Dismutase Kits	High-throughput assay formats
Unlike other assay kits for SOD, Trevigen's SOD Kit is not greatly disturbed by trace metals	Improved experimental results
Glutathione Kit includes procedure for determining total, oxidized and reduced glutathione	Ability to test for various forms of glutathione
Fast and efficient assays	Each SOD assay sample takes only 5 minutes; Each glutathione reductase sample takes only 6 minutes
Easy-to-use kit format	All necessary reagents for fast, consistent results

Related Products:

Oxidative Damage Enzymes

Description	Size	Catalog #
E. coli Endonuclease III Enzyme & Buffer	1000 units	4045-01K-EB
E. coli Endonuclease III Enzyme & Buffer	5000 units	4045-05K-EB
E. coli Endonuclease VIII Enzyme & Buffer	1000 units	4060-01K-EB
E. coli Endonuclease VIII Enzyme & Buffer	5000 units	4060-05K-EB
E. coli Fpg Enzyme & Buffer	500 units	4040-100-EB
E. coli Fpg Enzyme & Buffer	2500 units	4040-500-EB

Oxidative Damage Antibodies

Description	Size	Catalog #
8-oxo-dG Antibody	50 µl	4354-MC-050

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