Product DATASHEET

Superoxide Dismutase Activity Assay Kit (Colorimetric) ab65354

Overview

Product name: Superoxide Dismutase Activity Assay Kit (Colorimetric)
Detection method: Colorimetric
Sample type: Urine, Serum, Plasma, Other biological fluids, Tissue Extracts, Cell Lysate, Cell culture media
Assay type: Enzyme activity
Assay time: 0h 30m
Species reactivity: Reacts with: Other species, Mammals
Product overview: Superoxide Dismutase Activity Assay Kit (Colorimetric) ab65354 is a simple and rapid assay for superoxide dismutase (SOD) activity.

In the SOD assay protocol:
- superoxide anions are produced by the action of xanthine oxidase
- SOD catalyzes the dismutation of the superoxide anion into hydrogen peroxide and O₂
- superoxide anions act on WST-1 to produce a water-soluble formazan dye which can be detected by the increase in absorbance at 450 nm
The greater the activity of SOD in the sample, the less formazan dye is produced.

Superoxide dismutase assay protocol summary:
- add samples to wells
- add WST-1 working solution and enzyme working solution and incubate for 20 min at 37°C
- analyze with microplate reader

Notes
Superoxide dismutase (SOD) is one of the most important antioxidative enzymes. It catalyzes the dismutation of the superoxide anion into hydrogen peroxide and molecular oxygen.

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 +4°C. Please refer to protocols.
Relevance

Superoxide dismutase (SOD) is an antioxidant enzyme involved in the defense system against reactive oxygen species (ROS). SOD catalyzes the dismutation reaction of superoxide radical anion (O$_2^-$) to hydrogen peroxide, which is then catalyzed to innocuous O$_2$ and H$_2$O by glutathione peroxidase and catalase. Several classes of SOD have been identified. These include intracellular copper, zinc SOD (Cu, Zn SOD/SOD1), mitochondrial manganese SOD (Mn SOD/SOD2) and extracellular Cu, Zn SOD (EC SOD/SOD3).

Cellular localization

Cytoplasmic

Images

Park J et al investigates the recovery in erectile function after administration of chronic statin alone in DM (streptozotocin (STZ)-induced diabetes mellitus) rats. SOD activity was determined using Superoxide Dismutase activity assay kit (ab65354).

* Indicates statistical significance in comparison with DM group (P < 0.05).

† Indicates statistical significance in comparison with the statin group (P<0.05).

Superoxide dismutase measured in biofluids at various dilutions
Superoxidase dismutase (ab90040) measured showing inhibition rate (%) per concentration (microgram per mL)

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