



### QuantiChrom™ Peroxide Assay Kit

Peroxide (e.g. hydrogen peroxide  $H_2O_2$ ) is one of the key reactive oxygen species formed under oxidative stress conditions. High levels of peroxide formation have been linked to pathological conditions such as ageing, asthma, diabetes, atherosclerosis, cataract, inflammatory arthritis and neurodegenerative diseases.

Simple, direct and automation-ready procedures for quantitative determination of peroxide find wide applications in research and drug discovery. BioAssay Systems' peroxide assay kit is designed to measure peroxide concentration in biological samples without any pretreatment. The improved method utilizes the chromogenic  $Fe^{3+}$ -xylenol orange reaction, in which a purple complex is formed when  $Fe^{2+}$  provided in the reagent is oxidized to  $Fe^{3+}$  by peroxides present in the sample. The intensity of the color, measured at 540-610nm, is an accurate measure of the peroxide level in the sample. The optimized formulation substantially reduces interference by substances in the raw samples.

#### APPLICATIONS:

**Direct Assays:**  $H_2O_2$  in biological samples (e.g. serum, citrate-plasma, urine, cell lysate, culture medium).

**Pharmacology:** effects of drugs on peroxide metabolism.

#### KEY FEATURES:

**Sensitive and accurate.** Enhanced color intensity using sorbitol. Detection range 0.4  $\mu M$  (14 ng/mL) to 100  $\mu M$  (3,400 ng/mL)  $H_2O_2$  in 96-well plate assay.

**Simple and high-throughput.** The procedure involves addition of a single working reagent and incubation for 30 min. Can be readily automated as a high-throughput assay in 96-well plates for thousands of samples per day.

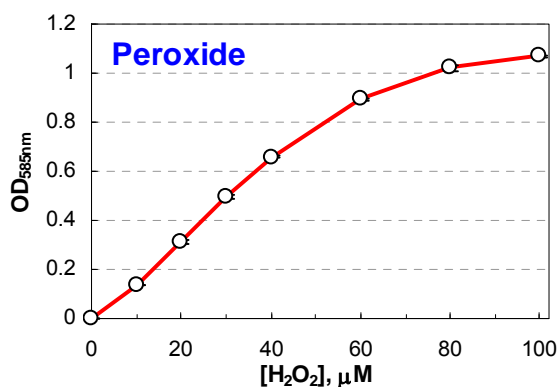
**Potential interference reduced.** For each sample, a background control is run under identical conditions with the omission of the  $Fe^{2+}$ . This procedure corrects for any interference from endogenous iron present in biological samples.

#### PRODUCT INFORMATION:

QuantiChrom™ Peroxide Assay Kit DIOX-250

Each kit is sufficient for 250 assays in 96-well plate. Kit includes:

- 1 x 1 mL Reagent A
- 1 x 1 mL Reagent B (for background control)
- 1 x 50 mL Reagent C
- 1 x 1 mL 35% stabilized  $H_2O_2$  Standard



Standard Curve in 96-well plate assay

#### REFERENCES:

- [1]. Karageuzyan KG (2005). Oxidative stress in the molecular mechanism of pathogenesis at different diseased states of organism in clinics and experiment. *Curr Drug Targets Inflamm Allergy*. 4(1):85-98.
- [2]. Arab K, Steghens JP. (2004). Plasma lipid hydroperoxides measurement by an automated xylenol orange method. *Anal Biochem*. 325(1):158-63.
- [3]. Banerjee D, Madhusoodanan UK, Nayak S, Jacob J. (2003). Urinary hydrogen peroxide: a probable marker of oxidative stress in malignancy. *Clin Chim Acta*. 334: 205-9.