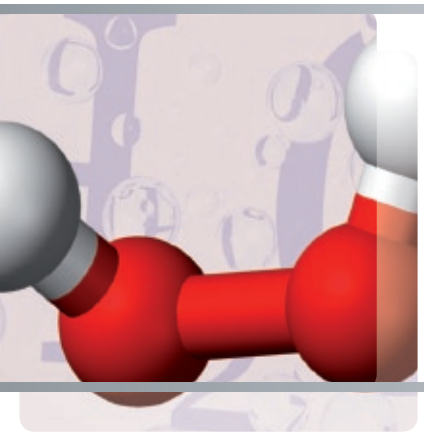

Enzo® Life Sciences

HYDROGEN PEROXIDE DETECTION

Red Hydrogen Peroxide Assay Kit ENZ-51004 500 Reactions

HIGHLIGHT

- **Flexible:** Quantify hydrogen peroxide in solution, in cell extracts or directly from certain cells
- **Versatile:** Detect a variety of oxidase activities through enzyme-coupled reactions
- **Sensitive:** Detect as little as 10 picomoles of hydrogen peroxide
- **Complete:** Mix and read reagents, with minimal hands-on time
- **Convenient:** Homogenous assay format, fully compatible with HTS automation

Hydrogen peroxide (H_2O_2) is a reactive oxygen metabolic by-product that serves as a key regulator for a number of oxidative stress-related states. It is involved in a number of biological events and intracellular pathways that have been linked to several diseases. Measurements of reactive oxygen species help to determine how oxidative stress modulates varied intracellular pathways. The Red Hydrogen Peroxide Assay Kit uses a non-fluorescent peroxidase substrate to quantify hydrogen peroxide in solution, in cell extracts and released from certain live cells, such as granulocytes (Figure 1). It can also be used to detect a variety of oxidase activities through enzyme-coupled reactions. The kit provides an optimized and homogenous assay format that is compatible with automated liquid handling systems. The Red Hydrogen Peroxide Assay Kit offers a sensitive, one-step fluorometric assay to detect as little as 10 picomoles of H_2O_2 in a 100 µL assay volume (Figure 2). The assay can be performed in a convenient 96-well or 384-well microplate format and is amenable to either fluorescence or absorbance based detection platforms with Ex/Em = 570 nm/590 nm or absorbance at 570 nm.

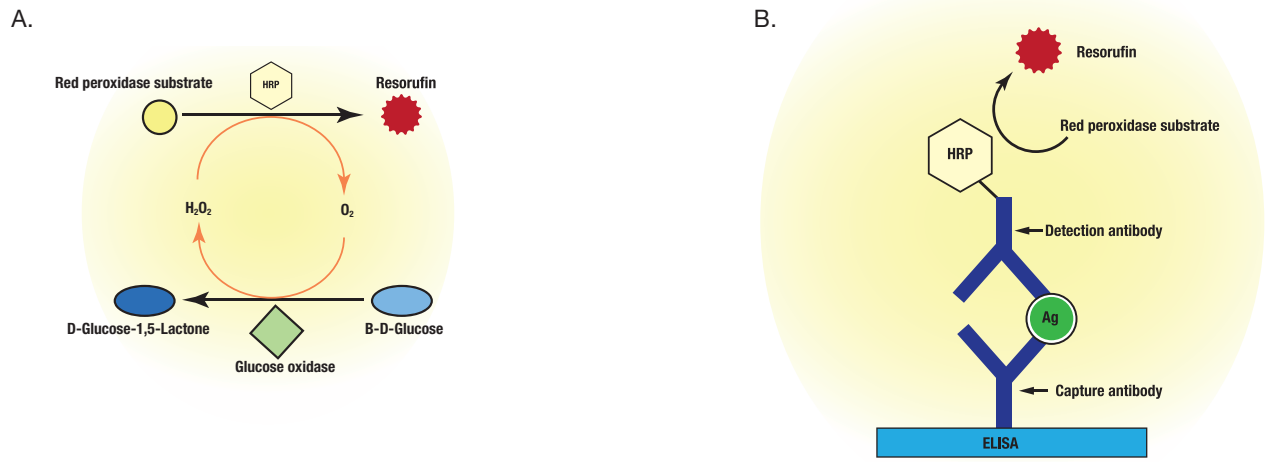

FIGURE 1: Conversion of Red Peroxidase Substrate into Resorufin: Horseradish peroxidase uses Red Peroxidase substrate as an electron donor during the reduction of hydrogen peroxide to water. The resultant product, resorufin, is a highly colored and fluorescent compound. Use of assay for detection of glucose oxidase activity (A). Use of assay in ELISA to detect HRP-antibody conjugates (B).

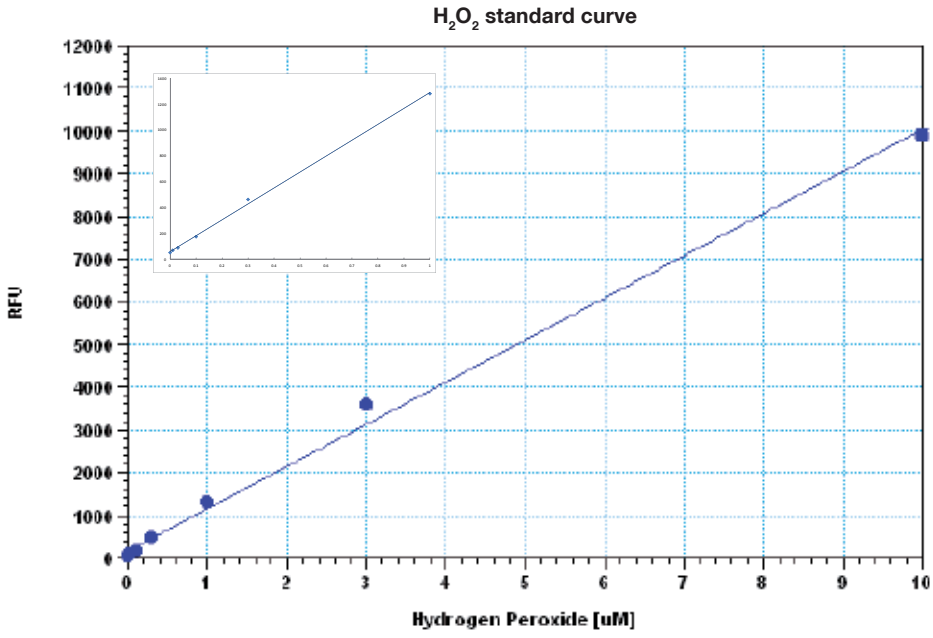

FIGURE 2: H_2O_2 dose response in a 384-well black well plate using a fluorescence microplate reader (NovoStar Labtech) measured with the Red Hydrogen Peroxide Assay Kit. As little as 0.01 µM H_2O_2 can be detected within a 30 minute incubation time (n=3). The inset shows low levels of H_2O_2 detection (< 1 µM).

Related Products

Product	Prod. No.	Size
ROS/RNS Detection Kit	ENZ-51001	200 Reactions
Luminol [3-Aminophthalhydrazide]	ENZ-52354	1 g

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