CREATIVE BIOMART®
Assay Kit

Myeloperoxidase Peroxidation Fluorometric Assay Kit

Product Information

Cat.No.

Kit-0607

Product Overview

MPO Peroxidation Fluorometric Assay provides a convenient fluorescence-based method for detecting the MPO peroxidase activity in both crude cell lysates and purified enzyme preparations. The assay utilizes the peroxidase component of MPO. The reaction between hydrogen peroxide and ADHP (10-acetyl-3,7-dihydroxyphenoxazine) produces the highly fluorescent compound resorufin. Resorufin fluorescence can be easily analyzed with an excitation wavelength of 530-540 nm and emission wavelength of 585-595 nm. The kit includes a MPO-specific inhibitor for distinguishing between MPO activity from MPO-independent fluorescence.

Description

Myeloperoxidase (MPO) is a member of the heme peroxidase superfamily and is stored within the azurophilic granules of leukocytes. MPO is found within circulating neutrophils, monocytes, and some tissue macrophages. A unique activity of MPO is its ability to use chloride as a cosubstrate with hydrogen peroxide to generate chlorinating oxidants such as hypochlorous acid, a potent antimicrobial agent. Recently, evidence has emerged that MPO-derived oxidants contribute to tissue damage and the initiation and propagation of acute and chronic vascular inflammatory diseases. The fact that circulating levels of MPO have been shown to predict risks for major adverse cardiac events and that levels of MPOderived chlorinated compounds are specific biomarkers for disease progression, has attracted considerable interest in the development of therapeutically useful MPO inhibitors. MPO also oxidizes a variety of substrates, including phenols and anilines, via the classic peroxidation cycle. The relative concentrations of chloride and the reducing substrate determine whether MPO uses hydrogen peroxide for chlorination or peroxidation.

Usage

Please read these instructions carefully before beginning this assay. For research use only. Not for human or diagnostic use.

Tel: 1-631-559-9269 1-516-512-3133
Email:info@creative-biomart.com
Fax:1-631-938-8127
45-1 Ramsey Road, Shirley, NY 11967, USA

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Storage

Stability: 6 months;Storage: 4°C;Remove the Myeloperoxidase Control from the kit and store at -20°C. The rest of the components should be stored at 4°C. This kit will perform as specified if used before the expiration date indicated on the outside of the box.

Kit Components

For best results, remove components and store as stated below.MPO Assay Buffer: 1 bottle, 4°C;Resorufin Standard: 500 µl, 4°C;DMSO Assay Reagent: 1 ml, Room temperature;MPO Hydrogen Peroxide: 1 vial, 4°C;Myeloperoxidase Control: 1 vial, -20°C;MPO Inhibitor: 1 vial, 4°C;MPO Peroxidation Substrate: 5 vials, 4°C;96-Well Solid Plate (black): 2 plates, Room temperature;96-Well Cover Sheets: 2 covers, Room temperature

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