CREATIVE BIOMART®
Assay Kit

MPO Inhibitor Screening Assay Kit

Product Information

Cat.No. Kit-0604

Product Overview

MPO Inhibitor Screening Assay Kit is a fluorescence-based method for screening inhibitors to both the chlorination and peroxidation activities of myeloperoxidase.

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 MPO-derived 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. Assays based on measurement of chlorination activity are more specific for MPO than those based on peroxidase substrates because peroxidases generally do not produce hypochlorous acid. However, it is important that when screening for MPO inhibition that both the chlorination and peroxidation activities be tested. This determines whether the inhibitor specifically interferes with the chlorination and/or peroxidation cycle or whether the inhibitor simply acts as a scavenger for hypochlorous acid. Also, many reversible inhibitors act by diverting MPO from the chlorinating cycle to the peroxidase cycle.

Usage

For research use only (RUO)

Storage

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

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Store the Control at -20°C. Store the other components at 4°C.

Kit Components

MPO Assay Buffer 1 vialMPO Chlorination Substrate 1 vialMPO Peroxidation Substrate 2 vialsMyeloperoxidase Control 1 vialMPO Inhibitor 1 vialMPO Hydrogen Peroxide 1 vialDMSO Assay Reagent 1 mL96-Well Solid Plate (black) 2 plates96-Well Cover Sheets 2 covers

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