CREATIVE BIOMART®
Assay Kit

Fluorescent Myeloperoxidase and Chlorination Detection Kit

Product Information

Cat.No. Kit-0603

Product Overview

Myeloperoxidase (MPO) is a highly cationic glycosolated hemoprotein that has a molecular weight of 144kD, HOCl is the most powerful bactericidal produced by neutrophils.

Description

Myeloperoxidase (MPO) is a highly cationic glycosolated hemoprotein that has a molecular weight of 144kD. The hemoprotein consists of two dimers linked via a disulfide bridge. Each dimmer is composed of a heavy (53kD) and light (15kD) subunit. Each heavy chain contains an independently acting protoporphyrin group containing a central iron. MPO is present in the azurophilic granules of polymorphonuclear leukocytes (PMNs) and is unique to neutrophils and monocytes. However, monocytes contain only one third of the MPO found in PMN"s. MPO utilizes H202 produced by the neutrophils to oxidize a varity of aromatic compounds to give substrate radicals for bactericidal activity (4 review). This enzyme is unique however in that it can oxidize chloride ions to produce a strong non-radical oxidant,HOCl. HOCl is the most powerfull bactericidal produced by neutrophils (4 review). Excessive production of these radicals can cause oxidative stress leading to oxidative tissue injury.

Applications

1. Detection of MPO chlorination activity in neutrophils and macrophages.2. Detection of PMN infiltration in tissue samples (inflammation and innate host defense mechanisms).3. Acute and chronic inflammatory disorders due to chlorination tissue damage.4. MPO chlorination activity in acute and chronic manifestations of cardiovascular disease.

Usage

1. For Research use only. Not for use in diagnostic procedures.2. Practice safe laboratory procedures by wearing protective clothing and eyewear.3. The fluorescent product of the detection reagent is not stable in the presence of thiols (DTT or 2-mercaptoethanol). Keep these reactants below 10mM. If you are using your own buffer, keep the reaction between pH 7.0-8.0 (optimal pH 7.4).4. NADH and glutathione (reduced form: GSH) may interfere with the assay.

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Storage

1. Kit Storage: 4-8°C and away from light.2. Once a vial of the Detection reagent is opened, it should be used promptly since it is subject to oxidation by air.

Kit Components

Reagent-Storage Temperature1. Detection Reagent, 1 Vial -20°C;2. 10X Assay Buffer, 60mL 2-8°C;3. Hydrogen Peroxide, 1000µL of a Stabilized 3% Solution 2-8°C;4. Myeloperoxidase, 1 Vial at 30Units/mL 2-8°C;5. APF, 1 Vial 2-8°C

Features & Benefits

1. Can monitor multiple time points to follow kinetics.2. One-step, no wash assay.3. Adaptable for High Throughput format.4. Highly Sensitive.5. Applications-Fluorescent Plate Reader.

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