Overview

Product name: Myeloperoxidase (MPO) Activity Assay Kit (Fluorometric)
Detection method: Fluorescent
Sample type: Cell culture supernatant, Tissue Extracts
Assay type: Enzyme activity
Sensitivity: > 0.0005 mU/well
Assay time: 0h 30m
Species reactivity: Reacts with: Mammals, Other species

Product overview

Myeloperoxidase (MPO) Activity Assay Kit ab111749 provides a rapid, simple and reliable fluorometric assay to study MPO activity.

In the MPO assay protocol, MPO catalyzes the production of sodium hypochlorite (NaClO) from hydrogen peroxide (H₂O₂) and sodium chloride (NaCl). Subsequently, NaClO reacts stoichiometrically with the free radical sensor Aminophenyl fluorescein (APF) to generate fluorescein, whose fluorescence can be detected at Ex/Em = 485/525 nm.

This MPO assay kit can be used to detect MPO activity as low as 0.5 µU per well.

MPO assay protocol summary:
- add fluorescein standard to wells and analyze with a microplate reader
- add samples to wells
- add reaction mix
- analyze every 2-3 mins with a microplate reader in kinetic mode for at least 30 mins

Notes

This product is manufactured by BioVision, an Abcam company and was previously called K745-100 Myeloperoxidase (MPO) Fluorometric Activity Assay Kit. K745-100 is the same size as the 100 test size of ab111749.

Platform

Microplate reader
Storage instructions
Store at -20°C. Please refer to protocols.

<table>
<thead>
<tr>
<th>Components</th>
<th>Identifier</th>
<th>100 tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assay Buffer</td>
<td>WM</td>
<td>1 x 25ml</td>
</tr>
<tr>
<td>Fluorescein Standard (1 mM)</td>
<td>Yellow cap</td>
<td>1 x 50µl</td>
</tr>
<tr>
<td>MPO Positive Control</td>
<td>Purple cap</td>
<td>1 vial</td>
</tr>
<tr>
<td>MPO Probe</td>
<td>Red cap</td>
<td>1 x 200µl</td>
</tr>
<tr>
<td>MPO Substrate Stock</td>
<td>Blue cap</td>
<td>1 x 50µl</td>
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</tbody>
</table>

Function
Part of the host defense system of polymorphonuclear leukocytes. It is responsible for microbicidal activity against a wide range of organisms. In the stimulated PMN, MPO catalyzes the production of hypohalous acids, primarily hypochlorous acid in physiologic situations, and other toxic intermediates that greatly enhance PMN microbicidal activity.

Involvement in disease
Defects in MPO are the cause of myeloperoxidase deficiency (MPD) [MIM:254600]. MPD is an autosomal recessive defect that results in disseminated candidiasis.

Sequence similarities
Belongs to the peroxidase family. XPO subfamily.

Cellular localization
Lysosome.

Images
a. Measurement of MPO activity in WBC lysate (0.1 µg) and MPO Positive Control (3 µL). b. MPO specific activity in WBC lysate.
Standard Curve using this kit protocol (Ex/Em = 485/525 nm)

Functional Studies - Myeloperoxidase (MPO)
Fluorometric Activity Assay Kit (ab111749)

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