



Ver.251201

Myeloperoxidase (MPO) Activity Assay Kit

BC5710 (50T/24S)

FOR RESEARCH USE ONLY, DO NOT USE IT IN CLINICAL DIAGNOSIS

Product Description

Myeloperoxidase (MPO) is a white blood cell enzyme secreted by activated neutrophils and monocytes/macrophages, mainly present in the phenylalanine blue granules of neutrophils and monocytes/macrophages. When white blood cells are activated, MPO is released into phagocytic vesicles and plasma, inducing oxidative stress and tissue damage under specific conditions, and is a biomarker of systemic inflammation and oxidative stress. MPO catalyzes the decomposition of H_2O_2 , while oxidizing orthoanisidine to form a colored substance. There is a characteristic absorption peak at 460nm, and the color depth is linearly related to the activity of MPO.

Kit components

Reagent I	Volume	Storage
Reagent I	60mL	2-8°C
Reagent II	Powder x 2	2-8°C
Reagent III	4mL	2-8°C
Reagent IV	1.5mL	2-8°C
Reagent V	100μL	2-8°C
Reagent VI	1mL	2-8°C

Open Vial Stability

Once opened, the reagent is stable up to four weeks at 2-8°C, if contamination is avoided

Reagents and Equipment Required but Not Provided

Constant temperature water bath, cooling centrifuge, UV-spectrophotometer/microplate reader, micro quartz cuvette/96 well UV-flat bottom plate and distilled water.

Reagent Deterioration

Turbidity or precipitation on in any kit component indicates deterioration and the component must be discarded. Sample should be retested using a fresh vial of reagent.

Reagent Preparation

Mix 4 volumes of Reagent I with 1 volume of Reagent II The working reagent is stable for 21 days at 2-8°C.

NOTE: Discard the working reagent if the blank absorbance is less than 1.0 at 340 nm

Precaution

- To avoid contamination, use clean laboratory wares. Use clean, dry disposable pipette tips for dispensing. Close reagent bottles immediately after use.
- Avoid direct exposure of reagent to light. Do not blow into the reagent bottles.

Operation Procedures

Sample Preparation

1. Bacteria or cells

Harvest the cells and wash twice with PBS. Ideal to use 5 million cells for the assay. Add 1mL Extraction Reagent to 5 million cells and ultrasonicate (200W, work time 3 second / interval 10 second repeat for 30 times) for complete lysis. Perform ultrasonication while keeping the cells in ice bath. Centrifuge at 8000 rpm, 4°C for 10 minutes and collect the supernatant. The supernatant should be kept on ice.

Note: Ideal proportion of Cells/Bacteria to Extraction Reagent is 1:5-10.

2. Tissue

Prepare 10% tissue homogenate by adding 1mL Extraction Reagent to 0.1g tissue. Grind completely to make a homogenate. Centrifuge at 8000 rpm, 4°C for 10 minutes and collect the supernatant.

3. Serum or Plasma

Directly use for the assay.

Unit Conversion

Traditional Unit	SI Unit	Conversion from Traditional to SI
U/L	$\mu\text{Kat/L}$	$\times 0.017$

Procedure Notes

Reagent	Volume
Working Reagent	1000 μL
Sample	10 μL
Mix and incubate at 37°C for 1 minute. Measure the change in absorbance per minute ($\Delta\text{OD/min}$) during 3 minutes.	

Calculation

$$\text{LDH-P activity (U/L)} = (\Delta \text{OD/min}) \times 16030$$

Performance

Linearity

This reagent is linear up to 2400 U/L

If the concentration is greater than linearity (2400 U/L), dilute the sample with normal saline and repeat the assay. Multiply the result with dilution factor.

Sensitivity

Lower detection Limit is 7 U/L.