DIAZYME LABORATORIES



# MYELOPEROXIDASE (MPO) ASSAY

## A Sensitive Inflammatory Biomarker

**Myeloperoxidase (MPO) is a hemoprotein present in leukocytes of blood circulation. It is well known that in published literature, elevated levels of plasma MPO is a sensitive indicator of inflammatory disorders.[1-6] MPO is involved in the oxidation of lipids contained within LDL particles, and its reaction products including hydrogen peroxide are involved in the initiation of systemic inflammation.[7-10] Diazyme's Latex Enhanced Immunoturbidimetric MPO Assay is accurate, cost effective and designed to work on validated general chemistry analyzers.**

## DIAZYME MYELOPEROXIDASE (MPO) ASSAY ADVANTAGES

- The MPO assay has been designed to work on most modern high throughput general chemistry analyzers
- Faster reporting and improved workflow for research laboratories
- Automated parameters available for a wide range of clinical instrumentation
- Liquid stable format requires no reagent preparation

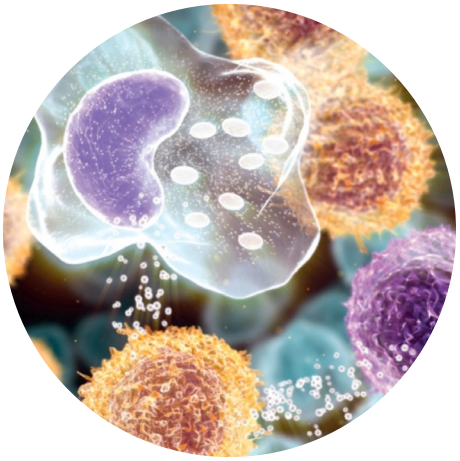
## REGULATORY STATUS

USA: For Research Use Only

CE

## AVAILABLE INSTRUMENT SPECIFIC PACKAGING

- **Roche**
  - Hitachi

# MYELOPEROXIDASE (MPO) ASSAY

**Dual Vial Liquid Stable**

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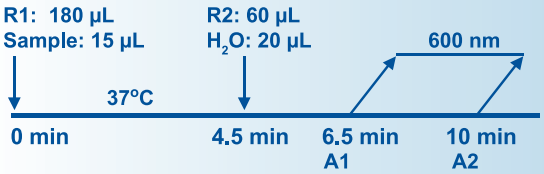
## ASSAY SPECIFICATIONS

| | |
|---|---|
| ***Method*** | Latex Enhanced Immunoturbidimetric Assay |
| ***Sample Type & Volume*** | • Plasma<br>- Lithium Heparin<br>- EDTA<br><br>Sample Volume 15 µL |
| ***Method Comparison*** | N = 54<br>y-intercept = 35.4 pmol/L<br>Slope = 1.01<br>$R^2$ = 0.98<br><br>Samples Ranged From:<br>31.4 ng/mL to 715.6 ng/mL |
| ***Linear Range*** | 83 to 5000 pmol/L |
| ***LOQ*** | 12 ng/mL |
| ***Calibration Levels*** | 5-Point Calibration |

### *Myeloperoxidase (MPO) Assay Procedure**




***Analyzer Dependent**

*For a list of validated parameters please contact Diazyme technical support at 858.455.4768 or email support@diazyme.com*


*1. Nilsson L et al. (1988) Activation of inflammatory system during cardiopulmonary bypass. Scand J Thorac Cardovasc Surg. 22: 51-3*
*2. Heinecke JW et al. (1999) Mechanisms of oxidative damage by myeloperoxidase in atherosclerosis and other inflammatory disorders. J Lab Clin Med 133: 321-5*
*3. Podil'chak MD and Terletskaia LM (1988) Clinical value of determing myeloperoxidase and alkaline phosphatase activity of the leukocytes in patients with suppuractive inflammatory processes. Klin Khir 59-60*
*4. G. Azzimondi G Re. et al (1997) Plasma lipoperoxidative markers in ischaemic stroke suggest brain embolism. European Journal of Emergency Medicine 4, 5-9*
*5. Luigi M. B. et al. (1996) Intracellular Neutrophil Myoloperoxidase is reduced in unstable angina and acute myocardial infraction, but its reduction is not related ischemia. JACC Vol. 27, No.3: 611-6.*
*6. Jessie Shih et al. (2008) Effect of collection tube type and preanalytical handling on myeloperoxidase concentrations. Clin. Chem. 54:6 1076–1079.*
*7. Podrez EA, Schmitt D, Hoff HF et al.: Myeloperoxidase-generated reactive nitrogen species convert LDL into an atherogenic form in vitro. J. Clin. Invest. 103, 1547–1560 (1999).*
*8. Naruko T, Ueda M, Haze K et al.: Neutrophil infiltration of culprit lesions in acute coronary syndromes. Circulation 106, 2894–2900 (2002).*
*9. Buffon A, Biasucci LM, Liuzzo G et al.: Widespread coronary inflammation in unstable angina. N. Engl. J. Med. 347, 5–12.(2002).*
*10. Sugiyama S, Okada Y, Sukhova GK et al.: Macrophage myeloperoxidase regulation by granulocyte macrophage colony-stimulating factor in human atherosclerosis and implications in acute coronary syndromes. Am. J. Pathol. 158, 879–891 (2001).*


## ASSAY PRECISION

*The simple precision of the Diazyme MPO Immunoassay was evaluated. In the study, two levels of MPO controls containing 534 pmol/L (77ng/mL) and 3824 pmol/L (551 ng/mL) MPO respectively were tested with 15 duplicates in one run.*

| | Level 1: 534 pmol/L | Level 2: 3824 pmol/L |
|---|---|---|
| ***Number of Data Points*** | 15 | 15 |
| ***Mean (U/L)*** | 534 | 3824 |
| ***SD (U/L)*** | 15 | 158 |
| ***CV (%)*** | 2.7% | 4.1% |

## ASSAY INTERFERENCE

*The substances normally present in the plasma were tested. Less than 10% deviation was produced when tested up to the concentrations shown below:*

| | |
|---|---|
| *Ascorbic Acid:* | *10 mM* |
| *Bilirubin, free:* | *40 mg/dL* |
| *Bilirubin, conjugated:* | *40 mg/dL* |
| *Hemoglobin:* | *200 mg/dL* |
| *Triglyceride:* | *270 mg/dL* |
| *Rheumatoid:* | *75 IU/mL* |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