

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

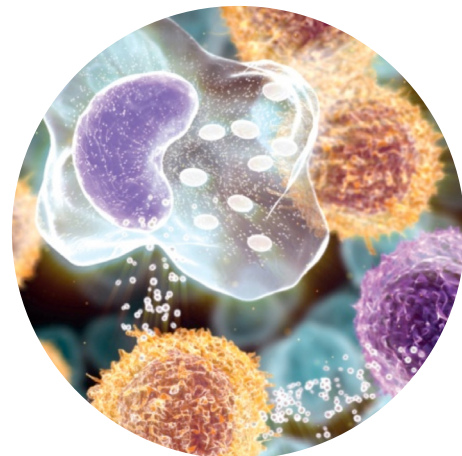
REGULATORY STATUS

USA: For Research Use Only



AVAILABLE INSTRUMENT SPECIFIC PACKAGING

- Roche
- Hitachi



MYELOPEROXIDASE (MPO) ASSAY

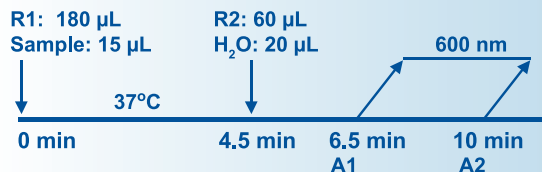


Dual Vial Liquid Stable

ASSAY SPECIFICATIONS

| | |
|---------------------------------|---|
| Method | Latex Enhanced Immunoturbidimetric Assay |
| Sample Type & Volume | • Plasma - Lithium Heparin - EDTA Sample Volume 15 µL |
| Method Comparison | N = 54 y-intercept = 35.4 pmol/L Slope = 1.01 R ² = 0.98 Samples Ranged From: 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 Cardiovasc 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
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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 Myeloperoxidase is reduced in unstable angina and acute myocardial infarction, 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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