IDK® Myeloperoxidase (MPO)

Enhanced risk analysis

for patients with

acute coronary syndrome

ELISA for the quantitative determination of MPO in human plasma and serum

For diagnosis and therapy monitoring

- Acute coronary syndrome
- Oxidative stress
- Septic shock
- Transplant rejection
- Respiratory system / asthma
- Psoriasis
- Gout
- Classifying leukemia
- Inflammatory marker in gastroenterlogy
  (MPO in stool, ELISA, Cat. No. K 6630)

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Myeloperoxidase (MPO)

The **development of atherosclerotic lesions** is multifactorial. The granulozyte enzyme myeloperoxidase (MPO) is fundamentally involved in this process as it is released during the elimination of microorganisms. The activity of MPO results in the **formation of highly reactive oxygen radicals** and on the **halogenation of proteins**.

Role of MPO in the acute coronary syndrome

During the acute coronary syndrome (unstable angina pectoris, myocardial infarction) the MPO level in serum is increased. An **inflammation** previous to the acute coronary syndrome seems to be the impetus. The inflammation is characterized by two events:

- Accumulation and activation of granulozytes (PMN)
  ↪ MPO-release
- Activation of thrombozytes
  ↪ sCD40L-release

According to Brennan et al. (2003) and Baldus et al. (2003) the released parameters – MPO and sCD40L – are the **earliest markers during a heart attack**.

This means

- MPO values give additional information beyond electrocardiogram,
- MPO is released before the myocardiac necrosis (this means before the release of necrotic markers like troponin T),
- high MPO levels indicate an elevated risk, even with troponin T levels < 0.01 ng/mL,
- the predictive value of MPO is independent of a systemic inflammation (no correlation with CRP),
- the combination of troponin T- and MPO-values can predict an approaching coronary event by a propability of 95 %.

Exner et al. (2006) presented data showing that MPO is a predictive marker for the progression of carotid stenosis going along with low level of hdl cholesterol (< 49 mg/dL), but not with hdl cholesterol- ≥ 49 mg/dL.

Reichlin et al. (2010)

- Patients with acute coronary syndrome: MPO is an **independent predictive marker for 1 year mortality**
- MPO value **supports the identification of patients with a positive prognosis** despite of high BNP level

IDK® **MPO**	
Matrix	Plasma, Serum
Sample volume	100 µL (Plasma) 25 µL (Serum)
Test principle	ELISA
Cat. No.	K 6631B

Analytical Sensitivity

Limit of blank (LoB)	0,161 ng/mL
Limit of detection (LoD)	0,294 ng/mL

IDK® **MPO**	
Matrix	Stool, Urine
Sample volume	100 mg (Stool) 100 µL (Urine)
Test principle	ELISA
Cat. No.	K 6630

References:

Baldus S et al. (2003) Myeloperoxidase serum levels predict risk in patients with acute coronary syndromes. Circulation 108: 1440-1445
Brennan M et al. (2003) Prognostic value of myeloperoxidase in patients with chest pain. N Engl J Med 349: 1595-1604
Exner M et al. (2006) Myeloperoxidase predicts progression of carotid stenosis in states of low high-density lipoprotein cholesterol. JACC 47(11) 2212-2218
Reichlin et al. (2010) Use of Myeloperoxidase for risk stratification in acute heart failure. Clin Chem 65(6): 944-951

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