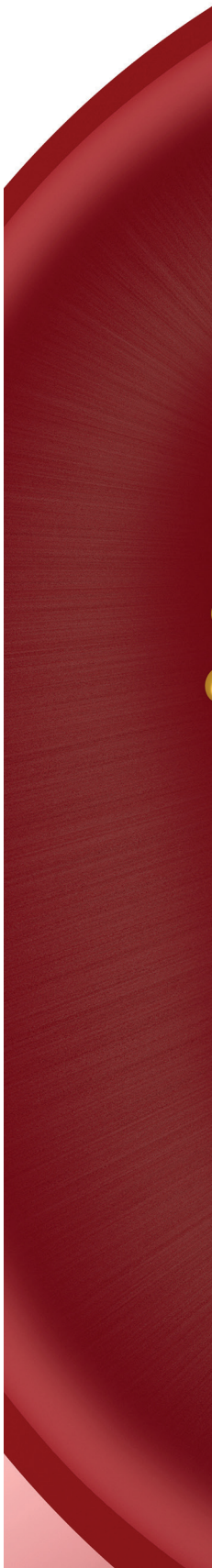
**Setting** the **standard** **for** **clinical** research.



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IMMUNOASSAYS

Divischgasse 4 · 1210 Vienna · Austria
T +43 1 291 07 45 · F +43 1 291 07 6389
info@bmgrp.com · www.bmgrp.com

# THE OXIDATIVE STRESS & ATHEROSCEROSIS ELISA PRODUCT LINE

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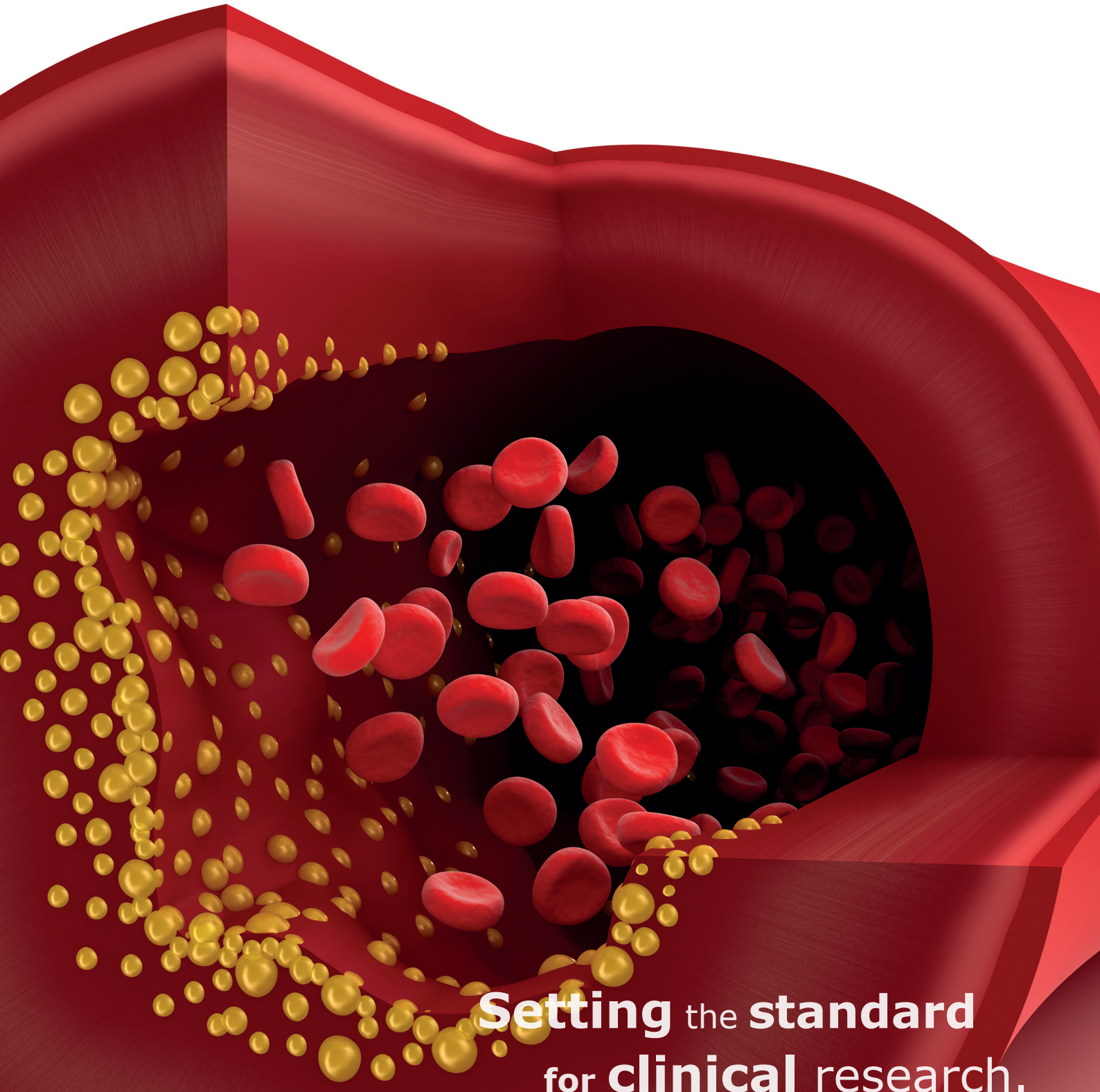

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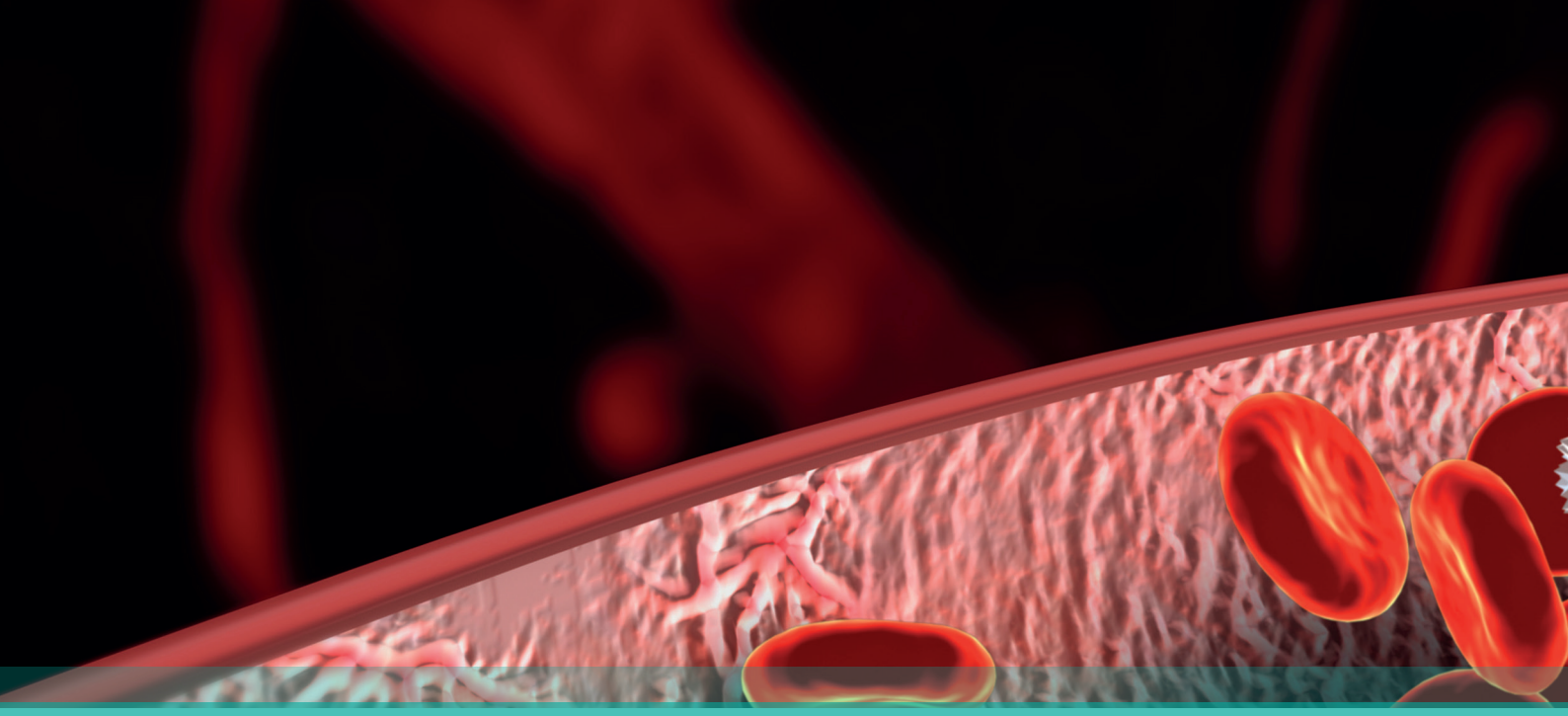


# THE OXIDATIVE STRESS & ATHEROSC

## Enzyme immunoassays and colorimetric assay for the quantitative determination of peroxides, MDA-oxLDL and autoantibodies against oxidized LDL in human samples.

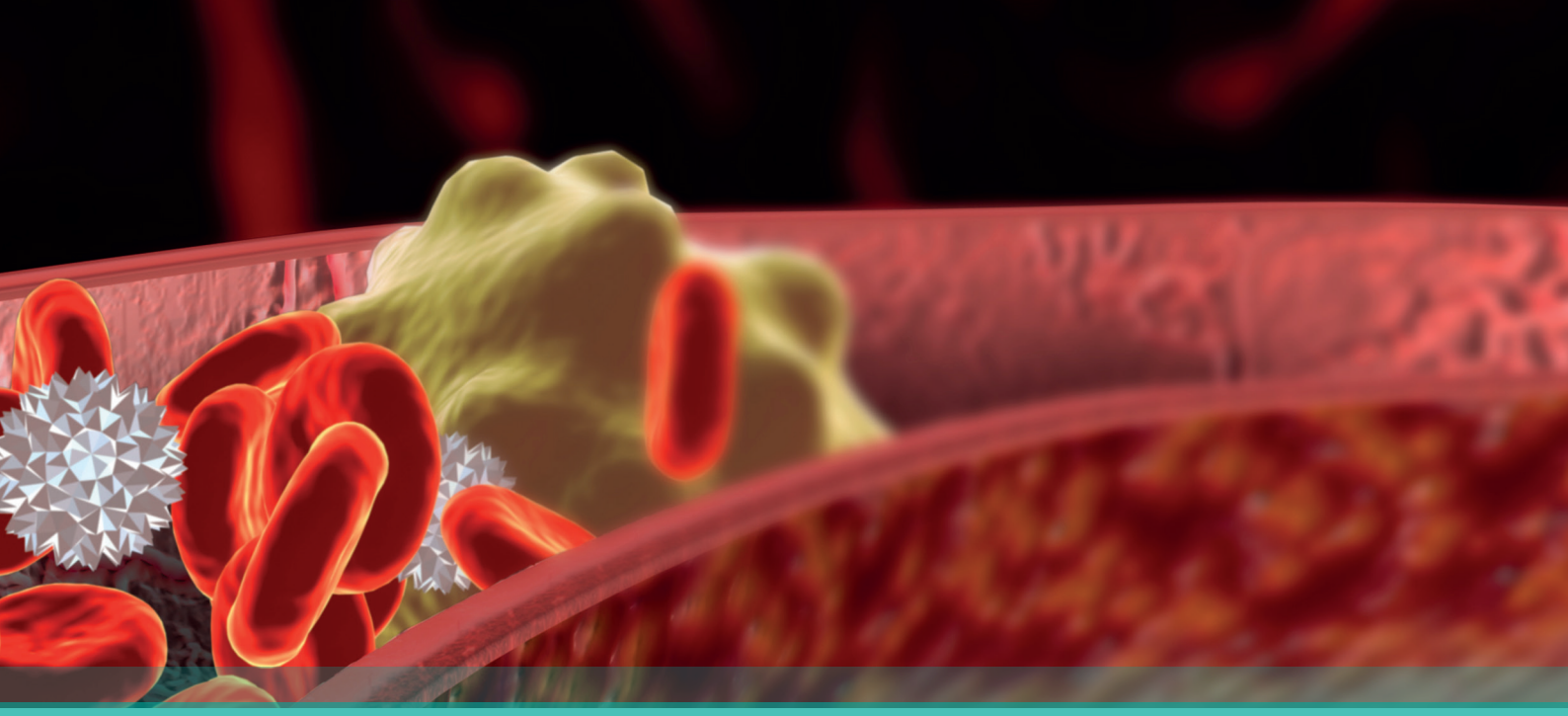
Oxidatively modified lipoproteins (oxLDLs) play an important role in the progression of atherosclerosis and coronary artery disease. Accumulation of oxLDL in macrophages and smooth muscle cells causes foam cell formation, an initial step in the disease. Low-density lipoprotein (LDL), the main carrier of plasma cholesterol, consists of a hydrophobic core and a surface monolayer of polar lipids and Apolipoprotein-B (ApoB). Oxidative stress and the consequent formation of free radicals lead to the peroxidation of ApoB. Malondialdehyde (MDA) has been identified as one of the major lipid peroxidation products of LDL, thus playing an important role in the LDL oxidation. The Biomedica MDA-oxLDL ELISA specifically detects MDA-modified ApoB in human serum and citrate-plasma.

Autoantibodies against oxidatively modified LDL can be used as a parameter that consistently mirrors the occurrence of oxidation processes taking place in vivo. The Biomedica oLAB ELISA has been developed to detect human IgG autoantibodies against oxLDL in human serum. Elevated levels of autoantibodies against oxLDL have been detected in the blood stream of patients with coronary artery disease. Moreover, studies indicate a correlation between autoantibodies against oxLDL (oLAB) and the progression of carotid atherosclerosis. Increased serum concentrations of oLAB have also been described in various diseases such as pre-eclampsia and systemic lupus erythematosus. Decreased oLAB titers were observed during septicemia and myocardial infarction.

Cells and tissues are sensitive to oxidative stress, caused by the formation of free radicals. If not deactivated by antioxidants, organic peroxides and hydroperoxides are the first reaction products between cellular constituents and free radicals or other reactive oxygen derivates. The Biomedica OxyStat assay measures the total peroxide concentration of a given sample. Results show a direct correlation between free radicals and circulating biological peroxides and thus allow the characterization of the oxidative status in biological samples.

## Related products – markers of vascular calcification:

- **Osteoprotegerin ELISA** (BI-20403)
- **Sclerostin ELISA** (BI-20492)
- **bioactive Sclerostin ELISA** (BI-20472)
- **FGF23 (C-terminal) ELISA** (BI-20702)
- **FGF23 (intact) ELISA** (BI-20700)



# EROSIS ELISA PRODUCT LINE

## Assay characteristics

**OxyStat Assay** (BI-5007) CE
**determination of peroxides in biological fluids**

| | |
|---|---|
| Method | Colorimetric Assay, HRP/TMB |
| Sample type | plasma, serum, biological fluids |
| Sample size | 10 µl / test, 12x8 tests |
| Standard range | 7 – 600 µmol/l |
| Detection limit | 7 µmol/l |
| Incubation time | 15 min |

**MDA-oxLDL ELISA** (BI-20022)
**determination of oxidized LDL**

| | |
|---|---|
| Method | Sandwich ELISA, HRP/TMB |
| Sample type | plasma, serum |
| Sample size | 20 µl / test, 12x8 tests |
| Standard range | 0 – 10 µg/ml |
| Detection limit | 0.3 µg/ml |
| Incubation time | 90 min / 90 min / 30 min |

**oLAB ELISA** (BI-20032) CE
**determination of autoantibodies against oxidized LDL**

| | |
|---|---|
| Method | Sandwich ELISA, HRP/TMB |
| Sample | type serum |
| Sample size | 50 µl / test, 12x8 tests |
| Standard range | 37 – 1200 mU/ml |
| Detection limit | 37 mU/ml |

**LITERATURE**


The impact of antihypertensive pharmacotherapy on interplay between protein-bound uremic toxin (indoxyl sulfate) and markers of inflammation in patients with chronic kidney disease. *Kaminski TW et al., Int Urol Nephrol. 2019, 51(3):491–502.*

Novel approaches for the assessment of relative body weight and body fat in diagnosis and treatment of anorexia nervosa: A cross-sectional study. *Lackner S et al., Clinical Nutrition 2019.*

Upregulation of the Nitrosylome in Bipolar Disorder Type 1 (BP1), but not BP2, and Major Depression: Increased IgM Antibodies to Nitrosylated Conjugates are Associated with Indicants of Leaky Gut. *Maes M et al., Preprints 2019, 2019030105.*

Oxidative-Nitrative Stress and Poly (ADP-Ribose) Polymerase Activation 3 Years after Pregnancy. *Horváth EM et al., Oxid Med Cell Longev 2018, Article ID 1743253, 9 pages.*

Oxidative Stress-Related Parthanatos of Circulating Mononuclear Leukocytes in Heart Failure. *Bárány T et al., Oxid Med Cell Longevity 2017, 1249614.*

Impact of the 24-h ultramarathon race on homocysteine, oxidized low-density lipoprotein, and paraoxonase 1 levels in professional runners. *Benedetti S et al., PLOS ONE 2018 13(2):e0192392.*

Whole-Body Cryotherapy Decreases the Levels of Inflammatory, Oxidative Stress, and Atherosclerosis Plaque Markers in Male Patients with Active-Phase Ankylosing Spondylitis in the Absence of Classical Cardiovascular Risk Factors. *Stanek A et al., Mediators of Inflammation2018, Article ID 8592532, 11 pages.*

Increased circulating oxidised low-density lipoprotein and antibodies to oxidised low-density lipoprotein in preeclampsia. *Arifin R et al., J Obstet Gynaecol 2017; 37:580–584.*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