OxisResearch™

Bioxytech® Assay Systems

Oxidative Biomarkers
Malondialdehyde (MDA)
Total Lipid Hydroperoxides
8-Isoprostane
Hydrogen Peroxide
8-Hydroxydeoxyguanosine
Aconitase
Hydroxyalkenals

Nitric Oxide Biomarkers
Nitric Oxide (Enzymatic)
Nitric Oxide (Non-Enzymatic)
Nitric Oxide Synthase (Radioactive)
Nitric Oxide Synthase (Colorimetric)

Antioxidant Biomarkers
Superoxide Dismutase
Total Glutathione
Glutathione
Glutathione Peroxidase (Cellular)
Glutathione Peroxidase (Plasma)
Glutathione Reductase
GSH/GSSG Ratio
Catalase

Inflammatory Biomarkers
Myeloperoxidase
Lactoferrin

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OXIDATIVE BIOMARKERS

MDA-586 ASSAY SYSTEM

NEW!

OxisResearch™

Your Source for Oxidative Stress Products and Services

OXIDATIVE BIOMARKERS

MDA-586 ASSAY SYSTEM

Catalog Number: 21044

Lipid peroxidation, a well-established mechanism of cellular injury in both plants and animals, is used as an indicator of oxidative stress. Lipid peroxides, derived from polyunsaturated fatty acids, are unstable and decompose to form a complex series of compounds including reactive carbonyl compounds. The most abundant of these is malondialdehyde (MDA), which is commonly used as a biomarker of lipid peroxidation. The MDA-586™ from *Oxis*Research™ is designed to measure free or total MDA (i.e. free or protein bound Schiff base conjugates) under assay conditions that minimize interference from other lipid peroxidation products such as 4-hydroxyalkenals. The assay improves upon our popular Bioxytech® LPO-586™ assay system.

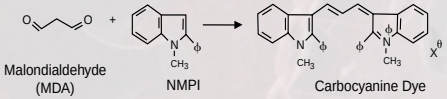
Improvements over Existing Method:

- Acid hydrolysis defined for "total MDA" measurement.
- Enhanced sensitivity via 3rd derivative spectroscopy.
- Antioxidant reagent included.
- Acid reagent included.

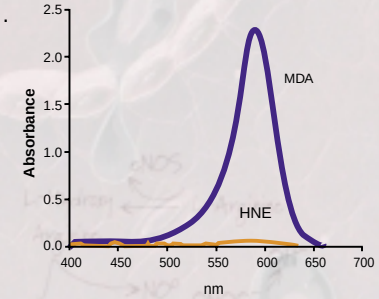
The MDA-586™ allows for simple, rapid measurement of MDA with superior specificity and reproducibility compared to other commonly used methods such as the thiobarbituric acid reactive substance assay (TBARS).

MDA-586 Method:

The *Oxis*Research™ MDA-586™ method is based on the reaction of a chromogenic reagent, N-methyl-2-phenylindole (NMPI), with MDA at 45°C to form an intensely colored carbocyanine dye with a maximum absorption at 586 nm.



The reaction is carried out in hydrochloric acid with the addition of an antioxidant to further minimize the reaction of 4-hydroxyalkenals. Under these conditions, there is little absorbance at 586 nm from HNE, the most common 4-hydroxyalkenal produced in cells subjected to lipid peroxidation



The table below shows improved standard deviation (SD) and lower limit of detection (LLD) values for MDA assayed in plasma utilizing the MDA-586™ 3rd derivative spectroscopy prodedure.

	Zero derivative	Third derivative
SD	0.65 µM	0.06 µM
LLD	3.0 µM	0.2 µM

PRODUCT SUMMARY

Catalog Number: 21044

Intended Use:

Quantitative measurement of malondialdehyde.

Format:

100 test colorimetric

Kit Contents:

- N-methyl-2-phenylindole
- Concentrated hydrochloric acid
- TMOP standard
- Butylated hydroxytoluene (BHT)
- Probucol
- Methanol

Storage and Stability:

12 Months from date of manufacture when stored as specified.

Specimen Requirements:

Serum, Plasma, Cell Lysate & Tissue

Assay Precision:

	LOW	MED.	HIGH
Mean (µM)	1.04	1.99	4.79
Intra Assay (%CV)	3.4	1.2	1.6
Total Precision (%CV)	3.7	1.6	1.7

Sensitivity:

LLD in reaction mixture	0.0801µM
LLD A_{586} in sample	0.0088