USED FOR

The d-ROMs Test provides an overall evaluation of the well-being of an organism at the time it is performed and can therefore be used as a preventive medical test.

This test presents a remarkable correlation with the common biomarkers of acute phase inflammation and represents an important evaluation index of the inflammatory and infectious state of the organism.

It is particularly important to perform the d-ROMs Test on subjects exposed to:

- oxidative stress risk factors (unbalanced diets, inadequate exercise, alcoholic beverage abuse, cigarette smoking)
- diseases associated with alterations in the oxidative balance (cardiovascular diseases, neuro-degenerative disorders, metabolic syndrome, tumours, autoimmune diseases, infections)
- treatments which increase the level of oxidizing species (radiotherapy, chemotherapy, dialysis)

Furthermore, the d-ROMs Test is sensitive in some cases in which the most common diagnostic biomarkers are not: for example where there are changes in metabolism (dysmetabolism) and alterations in mitochondrial activity.

EVALUATES

The d-ROMs Test photometrically measures the oxidation generated by free radicals in a sample of plasma or serum.

Free radicals are chemical species that exhibit an unpaired electron in an external orbital and are extremely unstable and highly reactive. Because of their reactivity, free radicals tend to react with any organic molecules they come into contact with, thus generating reactive oxygen derivatives or metabolites (Reactive Oxygen Metabolites, ROM). The ROMs have a good oxidizing strength, but they are also more stable than the radicals which generate them and can therefore be quantified through the chemical principle of the d-ROMs Test. The acronym d-ROMs derives from " derivatives of "ROMs" or "reactive oxygen metabolites". The oxidizing capacity measured by the d-ROMs Test is mainly generated by alkoxyl and hydroperoxyl radicals, derived from hydroperoxides (ROOH), in addition to chloroamine.

PRINCIPLE

In the d-ROMs Test the ROM (mainly the hydroperoxides, ROOH) contained in the biological sample, close to iron, generate alkoxyl ($R\text{-}O^{\bullet}$) and peroxyl radicals ($R\text{-}OO^{\bullet}$) by the Fenton reaction. The radicals, reacting with a chromogenic mixture, oxidize it and transform it into a photometrically measurable coloured derivative.

SAMPLE

The test can be carried out either on heparinized plasma or fresh or frozen serum.

PROCEDURE

Wavelength 505 nm o 546 nm
Optical path 1 cm
Temperature 37 °C
Method Kinetics/End Point

INSTRUMENTATION

The test can be used on FREE systems, manual photometers, automatic analysers and micro-plate readers.

FIELD OF APPLICATION:

Human and Veterinary

IVD/FRUO

In Vitro Diagnostics

KIT SIZE

DESCRIPTION	REFERENCE	TESTS
d-ROMs Test 1x25 ml	MC006	25
d-ROMs Test 1x50 ml	MC001	50
d-ROMs Test 2x50 ml	MC002	100
d-ROMs Test 4x50 ml	MC003	200
d-ROMs Test 40 det. FREE	MC013/FREE	40

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