



**H&D srl**  
 Strada Langhirano 264/1A  
 Parma (PR) - ITALY  
 +39 0521 462607  
 e-mail: [info@hedsrl.it](mailto:info@hedsrl.it)



# REDOX FAST



REDOXOBFF

Contents : **1) 50 d-ROMs Test FAST**  
**2) 50 PAT TEST**

## 1) d-ROMs Test FAST



### PRINCIPLE

Reactive oxygen metabolites, referred to as ROMs in Anglo-Saxon literature are a variety of free radicals which are characterized by the odd number of electrons found around the external orbit of oxygen. Given their extreme chemical instability, they form derivatives, in both plasma and cells, which remain highly chemically reactive and have an effective oxidative capacity. These derivatives, which react with a particular chromogen which has been correctly buffered, form a colored compound which may be measured photometrically with a maximum absorbency peak at 505 nm and directly proportional to their concentration.

### SAMPLE

Biological fluid: heparinized capillary plasma  
**NOTE: Do not use citrated or EDTA plasma**

Storage of the plasma:  
 - at room temperature: 36 hours  
 - 0-4°C : 48 hours  
 - -20°C : 1 year

### WHEN TO EXECUTE THE TEST

The test can be performed at any time during the day.  
 Sensitive variation of the value do not happen during a time if the conditions of the patient do not vary

### REAGENTS

**- Reagent R1 d-ROMs FAST** **50 cuvettes**  
 Condensed chromogen mixture  
 in reading cuvettes with caps. Store at 15-25 °C  
**- Reagent R2 d-ROMs FAST** **50 micro test tubes**  
 pH 4,8 buffer  
 Preservatives and stabilizers  
 Ready prepared microcuvettes. Store at 15-25°C  
**-Reagent R3 d-ROMs FAST** **1 ml**  
 Catalyst solution  
 Store at 15-25 °C

### KIT COMPOSITION

- n. 50 Dosed cuvettes of reagent R1, disposable/single-dose;
- n. 50 Dosed micro test tubes of reagent R2, disposable/single-dose;
- n. vial of reagent R3;
- n. 50 sterile lancets, single-dose;
- n. 50 heparinized microvette, single-dose;
- n. 100 tips, disposable/single-dose.

### EQUIPMENT NOT PROVIDED

Pipette (10 µL e 40 µL) - photometer

### STORAGE AND STABILITY

All reagents remain stable, before and after opening, until the expiry date found on the packaging if kept away from direct sunlight and stored at the temperature indicated.

### PRECAUTIONS

According to DM 28/01/1992 and Directive 91/155 EEC, the product is not classified as dangerous. It contains non-active components whose total concentration is lower than the limits set by the Directives 67/548/EEC and 88/379/EEC et seq. mod. on the classification, packaging and labeling of dangerous substances.

Handle the product with caution, according to good laboratory practice, avoid ingestion, avoid contact with skin, eyes and mucous membranes.  
 Safety data sheets of individual components are available upon request.

### WASTE DISPOSAL

The product should be disposed of according to local legislation on waste management.

### WORKING CONDITIONS

Wavelength: 505 nm  
 Optical path: 1 cm  
 Reactive temperature: RT

### SAMPLE PREPARATION

1. Prepare a microvette: draw out the microvette from its container and peel off the attached small tip to the main tip.
2. Gently massage the finger to promote blood circulation, disinfect with alcohol (avoid hydrogen peroxide, a powerful oxidant)
3. Using sterile lancets and lancing practice fingerstick puncture.
4. Discard the first drop of blood with a cotton swab, this operation is necessary because the first drop may contain too much liquid cell.
5. Move your finger near the thinner end of the microvette and let the blood through the smaller hole. Fill the microvette until the end of the fins.
6. Plug FIRST the smaller hole with the small tip and SECOND the bigger hole. Put the microvette in its container.

### PROCEDURE

**ATTENTION:** Before carrying out the tests, you should prepare all necessary materials. The instrument must be switched on at least 10 minutes before a test and should not be used until it has finished warming up.

1. Centrifuge the capillary blood taken, in order to separate the plasma from the rest of the sample. Always remember to balance the sample during centrifugation.

2. Preparer working solution depositing in micro test tube containing reagent R2 10 ul of reagent R3 using the white pipette and shake for reverse for about 10 seconds.
3. After centrifugation and preparation of the working solution taken with the pipette (White) that comes with the tool, 10 uL of plasma and deposited in micro test tubes containing the working solution and mix by inversion for at least 10 seconds.
4. Open the cap of the vial and remove the safety ring from the cap by pulling it down. Transfer the contents into a cuvette containing the reagent R1, the chromogen condensed.
5. Close the vial with the cap and mix gently by inversion for 10 seconds. Avoid foaming.
6. Insert the cuvette into the reading room making sure that the sides are ribbed oriented as indicated on the label. Ensure that the cuvette

### REFERENCE VALUES

From 250 to 300 UCarr	Normal values
From 301 to 320 UCarr	Border line range
From 321 to 340 UCarr	Slight oxidative stress
From 341 to 400 UCarr	Oxidative stress
From 401 to 500 UCarr	High oxidative stress
> 500 UCarr	Very high oxidative stress

The reference values are expressed in **U Carr**  
**1 U Carr = 0.08 mg H<sub>2</sub>O<sub>2</sub>/dl**

**Test is accuracy between 100 U Carr till 600 U Carr.**

### REFERENCES

Cornelli U, et al. *Intern. Union of Angiology's Bulletin*. 1999. 15: 7-10.  
 Cesarone MR, et al. *International Angiology*. 1999. 18 (2): 127-130.  
 Alberti A, et al. *Res Chem Intermed*. 2000. 26 (3): 253-67.  
 Trotti R., et al. 2001. *Haematologica*. 86: 85-91.  
 Gerardi GM, et al. *Clin Chem Lab Med*. 2002. 40 (2): 104-110.

### GRAPHICAL SYMBOLS ADOPTED



Read the instruction

Size/number of tests

Store at RT (+15-25°C)



Manufacturer



Catalog number



Lot



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**2) 50 PAT TEST**

## 2) PAT Test



### PRINCIPLE

Plasma antioxidant capacity is a key measure for understanding the body's ability to address the condition of OXIDATIVE STRESS generated by a wide range of factors (exercise, diet, diseases, etc.) and that, if sustained over time, can be a real disease symptoms. At the systemic level defense against invasive attack caused by "free radicals", is guaranteed by the RAO (antioxidant network). This RAO includes either exogenous or endogenous compounds. Each above mentioned compound possesses its own antioxidant power, depending on their reduction-oxidation potential and to the ability of plasma barrier components to give "reducing equivalents to reactive species. PAT test is based on the ability of a colored solution, containing ferric (Fe<sup>3+</sup>) ions adequately bound to a special chromogenic substrate, to decolour when its Fe<sup>3+</sup> ions are reduced to ferrous (Fe<sup>2+</sup>) ions as well as it can be observed by adding a reducing system. The PAT test allows the plasma antioxidant determination; in fact in the test, all the potential interferences are eliminated (for example, phosphates).

### SAMPLE

Biological fluid: heparinized capillary plasma.  
**NOTE: Do no use citrated or EDTA plasma**

Storage of the plasma:  
 - at room temperature: 36 hours  
 - 0-4°C : 48 hours  
 - -20°C : 2 month

### WHEN TO EXECUTE THE TEST

The first test should be performed on patients fasting from the evening before. This is because food and drinks, such as coffee, tea, fruit juice, affect the level of antioxidants in plasma and thus distort the test result. There are no evidences of substantial fluctuations in value over time if the subject conditions remains unchanged.

### REAGENTS

**- Reagent R1 PAT TEST** **50 cuvettes**  
 Chromogen Solution in a dosed cuvette.  
 Store at 15-25 °C  
**- Reagent R2 PAT TEST** **3 ml**  
 Ferric nitrate solution.  
 Preservatives and stabilizer. Store at 15-25°C

### KIT COMPOSITION

- n.50 dosed cuvettes of reagent R1, disposable/single-dose;
- n.1 vial of reagent R2;
- n.50 sterile lancets, single-dose;
- n.50 heparinized microvette, single-dose
- n.100 tips, disposable/single-dose.

### EQUIPMENT NOT PROVIDED

Automatic pipettes – Photometer

### STORAGE AND STABILITY

All reagents remain stable, before and after opening, until the expiry date found on the packaging if kept away from direct sunlight and stored at the temperature indicated.

### PRECAUTIONS

According to DM 28/01/1992 and Directive 91/155 EEC, the product is not classified as dangerous. It contains non-active components whose total concentration is lower than the limits set by the Directives 67/548/EEC and 88/379/EEC et seq. mod. on the classification, packaging and labeling of dangerous substances.

Handle the product with caution, according to good laboratory practice, avoid ingestion, avoid contact with skin, eyes and mucous membranes.  
 Safety data sheets of individual components are available upon request.

### WASTE DISPOSAL

The product should be disposed of according to local legislation on waste management.

### WORKING CONDITIONS

Type of measure:	Differential
Wavelength:	505 nm
Optical path:	1 cm
Reactive temperature:	RT

### SAMPLE PREPARATION

1. Prepare a microvette: draw out the microvette from its container and peel off the attached small tip to the main tip.
2. Gently massage the finger to promote blood circulation, disinfect with alcohol (avoid hydrogen peroxide, a powerful oxidant)
3. Using sterile lancets and lancing practice fingerstick puncture.
4. Discard the first drop of blood with a cotton swab, this operation is necessary because the first drop may contain too much liquid cell.
5. Move your finger near the thinner end of the microvette and let the blood through the smaller hole. Fill the microvette until the end of the fins.
6. Plug FIRST the smaller hole with the small tip and SECOND the bigger hole. Put the microvette in its container.

### PROCEDURE

**ATTENTION:** Before carrying out the tests, you should prepare all necessary materials. The instrument must be switched on at least 10 minutes before a test and should not be used until it has finished warming up.

1. Centrifuge the capillary blood taken, in order to separate the plasma from the rest of the sample. Always remember to balance the sample during centrifugation.
2. Take the cuvette containing the reagent R1 and add 40 µl of reagent R2 solution, close the tip and mix by inversion for about 10 s. Insert the cuvette in the reading cell.
3. Remove the vial from the reading cell. Add 10 mL of plasma in the same vial, closed with its cap, mix by repeated inversion for about 10 seconds, insert the cuvette into the reading cell. Wait for the result in 1 minute.

### REFERENCE VALUES

>2800 U Cor	Very high value
2800 – 2200 U Cor	Normal value
2200 – 2000 U Cor	Border line range
2000 – 1800 U Cor	Slight deficiency status
<1800 U Cor	Deficiency status

The reference values are expressed in **U Cor**  
**1 U Cor = 1.4 x micromol/L Vitamin C** (Vitamin C is the standard)

Test is accuracy between 500 U Cor till 10000 U Cor.

### REFERENCES

Cornelli U, Belcaro G, Finco A. "The Oxidative Stress Balance Measured in Humans with Different Markers, Following a Single Oral Antioxidants Supplementation or a Diet Poor of Antioxidants" JCDsa, 2011 in press doi:10.4236/jcdsa.2011.13011

### GRAPHICAL SYMBOLS ADOPTED



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Size/number of tests

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