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CE

SAT TEST 50b
SALIVA ANTIOXIDANT TEST

REF SAT50B Σ **50 test**

PRINCIPLE

The defense against damaging attack at the mouth level caused by reactive species, in particular by free radicals, is guaranteed by the saliva, the main constituent of the antioxidant barrier. It includes endogenous and exogenous substances that have their own "antioxidant capacity", in relation to their redox potential. The basic principle of the SAT test exploits the ability of a colored solution of ferric ions (Fe3+) complexed to a chromogen, to bleach, when Fe3+ ions are reduced to ferrous ions (Fe2+) in the presence of reducing agents (antioxidants).

SAMPLE

Biological fluid: saliva

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. If the patient is not fasting is advisable to have the patient drink a glass of water (100-150 mL) half an hour before the test.

REAGENS

- Reagent R1 **5 x 10 pz.**
Chromogen Solution in a dosed cuvette.
Store at 15-25 °C

- Reagent R2 **1 x 2,5 mL**
Ferric nitrate solution.
Preservatives and stabilizer.
Store at 15-25°C

KIT COMPOSITION

- n.50 Dosed Cuvette, disposable/single-dose;
- n.1 vial of reagent R2;
- n.100 tips, disposable/single-dose.
- n. 50 cotton squares
- n.50 plastic glasses

EQUIPMENT NOT PROVIDED

Automatic pipettes (10 µl- 40 µl) – Photometer- Balance

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

SAMPLE PREPARATION

1. Weigh a glass and a small square of cotton, using the appropriate weight that comes with the tool and note the value obtained (T0).

2.Give the piece of cotton square to the patient and invite him to roll it in the mouth for 1 minute (for about 60 bites without chewing the cotton) in order to induce the production of saliva. Saliva should be conveyed on the cotton.

3.At the end of the minute, re-weight the glass and the cotton (T_1) and the difference (T_1-T_0) might give a value between 1,1 to 1,4 ml (at least 1,1 ml of saliva). This range meets to the optimal salivary flow to have the maximum antioxidant power and a constant uric acid quantity (uric acid is the main saliva antioxidant) (N.B. if the difference (T_1-T_0) is greater or less than expected, the saliva collection should be repeated by reducing or increasing the number of rolling, but not the time).

4.Squeeze manually the cotton in order to collect the saliva.

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.Take the cuvette containing the SAT R1 reagent and add 40 µl of R2 solution using the pipette equipped with the SAT box and the relative disposable tip.

2.Close the cuvette with the lid and mix by inversion for about 10 seconds.

3.Insert the cuvette into the reading cell, making sure that the ribbed sides are oriented according to the instruction reported and in accordance with the label and also make sure that the cuvette is pushed until the bottom of the reading cell. The instrument carry out the first reading in about 2 seconds. Remove the cuvette from the reading cell following the instructions that appear on the display.

4.Take a sample of 10 µl of saliva and add it into the cuvette containing the R1+R2 SAT solution which you just removed from the reading cell of the instrument. The saliva must be taken using the white pipette equipped with the SAT box and the relative disposable tips.

5.Close the cuvette with the lid and mix by inversion for about 10 seconds.Insert the cuvette into the reading cell, as above, making sure that the ribbed sides are oriented according to the instruction reported and in accordance with the label and also make sure that the cuvette is pushed until the bottom of the reading cell. The instrument carry out the second reading. Wait 1 minute for the result and the printing of the receipt with the value (µmol/l)

NORMAL VALUE

The reference values are expressed in micromol per liter (µmol/L or µM)of antioxidants. In this case the reference is the antioxidant vitamin C which is used as iron-reducing agent of interest:

< 1000 µM	Severe shortage
1000 – 1500 µM:	**Optimal normal values**
1500 – 2000 µM :	Normal values
2000 – 2500 µM :	Border line values
> 2500 µM:	Possible inflammatory processes on place

METROLOGICAL CHARACTERISTICS

Specificity: SAT test is specific for the determination of the systemic antioxidant potential.
Accuracy: Test accuracy between 500 till 6000 µM

REFERENCES

Cornelli U et al. Pan Minerva Medica 2010; 52(2).
Benedetti S et al. Clin Lab Med (In press)

GRAPHICAL SYMBOLS ADOPTED

Read the instruction
Size/number of tests
Store at RT (+15-25°C)
Manufacturer
Catalog number
Lotto