

FREE RADICAL TEST KIT (NEW)

CONTENTS OF FREE RADICAL TEST KIT

- 1 Colour chart
- 1 Test instruction sheet
- 2 pipettes (small + large)
- 1 Large test tube
- 1 vial with blue cap - reagent 1
- 1 vial with red cap - reagent 2



STORAGE OF FREE RADICAL TEST KIT

The Free Radical Test kit should be stored in a cool place - preferably between 20oC to 30oC.

PREPARATION OF SPECIMEN SOLUTION FOR TESTING

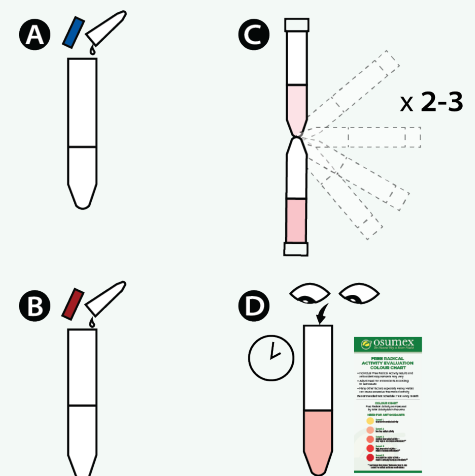
- Remove the 3 small vials from the large test tube.
- Use the pipette to transfer 5 ml. of the **first morning** urine solution to be tested into the large test tube
- The specimen solution is now ready for testing

CONDUCTING THE TEST

Note: once the vials are opened and exposed to air, it should be used within 1-2 minutes to avoid oxidation of the reagents

- Add all the liquid content in the blue cap vial (reagent 1) to the specimen solution in the large test tube and gently swirl to mix the solutions. Use small pipette, if needed, to transfer the reagent as surface tension of liquid may prevent it from flowing out easily.
- Add all the liquid solution in the red cap vial (reagent 2) to the solutions in the large test tube
- Cap the large test tube and mix the solutions thoroughly by turning up and down 2 - 3 times.
- Wait 5 minutes and check the colour result of the solution by looking down the top opening of the test tube comparing it to the colour chart provided.

Note: It is more accurate to view the color of the result from the top opening of the test tube rather than from the side.

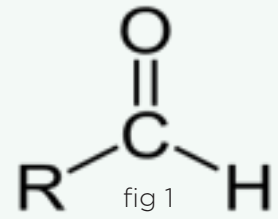


WARNING

- Please keep the Free Radical Test kit in a safe place out of reach of children.
- After the test has been completed, the tested solution should be disposed of safely.
- The best disposal method is to flush the solution in the toilet.
- There should not be any contact of the contents of the Free Radical Test kit with food.
- Please wash your hands thoroughly after use.

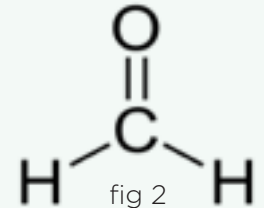
SCIENCE

The Free Radical Test kit follows the principle of Schiff's reaction and measures all aldehydes - Malondaldehyde (MDA) and acetaldehyde from metabolism of alcohol - which correlate to total oxidative stress of the body. It is a better measure of oxidative stress than just malondialdehyde (MDA). Aldehydes react with the amino groups of initially colourless Fuchsin sulphurous acid to restore the original Hybridization of its central atom to coloured. The colour changes from pink to purple (Triphenyl methane dyes). It does not work with sugar, glyoxal aromatic hydroxyaldehydes and alpha-unsaturated fatty acids. It is therefore a semi-quantitative test.



ALDEHYDES

Aldehyde is an organic compound containing the group -CHO , formed by the oxidation of alcohols. Typical aldehydes include methanal (formaldehyde) and ethanal (acetaldehyde). (fig 1)



The group—without R—is the aldehyde group, also known as the formyl group. Aldehydes are common in organic chemistry, and many fragrances are aldehydes.

For example, Formaldehyde. (fig.2)

Aldehydes have properties that are diverse depending on the remainder of the molecule. Smaller aldehydes are more soluble in water, formaldehyde and acetaldehyde completely so. The volatile aldehydes have pungent odors. Aldehydes degrade in air due to autoxidation.


The two aldehydes of greatest importance in industry, formaldehyde and acetaldehyde, have complicated behavior because of their tendency to oligomerize or polymerize. They also tend to hydrate, forming the geminal diol. The oligomers/polymers and the hydrates exist in equilibrium with the parent aldehyde.

PEROXIDATION OF UNSATURATED LIPIDS

The variety of lipids and the random nature of free radical reactions leads to many products. These include 4-hydroxyalkenals (4-HDA) and, when there are 3 or more unsaturated bonds, malondialdehyde (MDA). These can serve as targets for the measurement of fatty acid peroxidation. The initiating reaction can be with another radical, UV light or radiation. Since a radical is also produced in the process, it causes a chain reaction.

Accordingly the more aldehydes that are present in the urine measured, the higher the level of free radical activity in the body. It also gives rise to a stronger colour result.

Glutathione is the most significant non enzymatic oxidant defense mechanism. It exists in relatively large amounts (M levels) and serves to detoxify peroxides and regenerate a number of important antioxidants (e.g. -tocopherol and ascorbic acid). The best way to obtain glutathione is through L-Cysteine as the body does not absorb glutathione taken orally well. Cysteine is more bioavailable to the body which can convert it to glutathione easily.



FREE RADICAL ACTIVITY EVALUATION COLOUR CHART

- Individual Free Radical Activity results and antioxidant requirements may vary
- Adjust need for antioxidants according to test results
- Many other factors especially Heavy Metals can cause excessive free radical activity

Recommended test schedule: Test every month

COLOUR CHART

Free Radical Activity as measured by total Aldehydes in the urine

NEED FOR ANTIOXIDANTS

- Level 1** very low free radical activity
- Level 2** low free radical activity
- Level 3** medium free radical activity - may require to increase antioxidants**
- Level 4** high free radical activity - need to increase antioxidants**
- Level 5** very high free radical activity - need to seriously increase antioxidants**

** use Osumex Glutathione / Mushrooms blend to help control free radicals and increase antioxidants

The Natural Way to Better Health