

## Total Oxidant Status Assay Kit

### Product Information

#### Common Name

TOS

**Cat.No.** Kit-2173

#### Product Overview

Oxidants present in the sample oxidize the ferrous ion–chelator complex to ferric ion. The oxidation reaction is prolonged by enhancer molecules, which are abundantly present in the reaction medium. The ferric ion makes a colored complex with chromogen in an acidic medium. The color intensity, which can be measured spectrophotometrically, is related to the total amount of oxidant molecules present in the sample. The assay is calibrated with hydrogen peroxide and the results are expressed in terms of micromolar hydrogen peroxide equivalent per liter ( $\mu\text{mol H}_2\text{O}_2$  Equiv./L).

#### Storage

The kit is shipped on wet ice and storage at 2-8 °C is recommended. Stable up to expiry date when stored capped and at 2-8 °C even after start using.

#### Kit Components

Reagent 1, 1 x 30 ml: Buffer Solution H<sub>2</sub>SO<sub>4</sub>, 25mM pH1.75

Reagent 2, 1 x 8 ml:

Substrate Solution H<sub>2</sub>SO<sub>4</sub>, 25mM pH1.75

Ferrous ion, 5 mM

O-dianisidine, 10nM

Standard, 1 x 4 ml: H<sub>2</sub>O<sub>2</sub>, 10  $\mu\text{mol/L}$

Quality Control - Level 1, 1 x 4 ml: H<sub>2</sub>O<sub>2</sub>, 5  $\mu\text{mol/L}$

Quality Control - Level 2, 1 x 4 ml: H<sub>2</sub>O<sub>2</sub>, 20  $\mu\text{mol/L}$

#### Technical Notes

Normal Range

Human Serum: 4.00 – 6.00  $\mu\text{mol/L}$  (400 – 600  $\mu\text{mol/hL}$ )

Each laboratory is recommended to establish their own reference values.



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### Precision:

Inter-assay coefficient of variation 3.2%

Intra-assay coefficient of variation 3.9%

### Assay Range:

Samples containing 0.2 – 80  $\mu\text{mol H}_2\text{O}_2$  Equiv./L can be assayed without further dilution or concentration.

### Interferences:

EDTA interfere with the results.

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### Compatible Sample Types

Blood serum, heparinised plasma, semen plasma, saliva, urine, cell lysates and tissue homogenates can be used as sample.

Serum samples are stable up to 1 week stored at 4°C, 6 months at -20°C and 1 year at -80°C.

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### Assay Protocol

Wavelength 530nm

Pipette into cuvette as below order

Sample OR Standard OR H<sub>2</sub>O: 45  $\mu\text{l}$

Reagent 1: 300  $\mu\text{l}$

Mix well

Read absorbance (A1) after 30 seconds

Reagent 2: 15  $\mu\text{l}$

Mix well

Read absorbance (A2) after 5 minutes at 37°C

OR

Read absorbance (A2) after 10 minutes at RT

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### Analysis

$A_2 - A_1 = \Delta\text{Abs}$  of standard or sample

Results =  $\Delta\text{Abs Sample} / \Delta\text{Abs Standard} \times 10^*$

\*Concentration of standard