Total Antioxidant Capacity assay kit (Cat.#: AC01DE)

The measurement of TAC (total antioxidant capacity) in various antioxidants.

Total antioxidant capacities of various antioxidants (ascorbic acid, uric acid, glutathione, and *N*-acetyl-cysteine) were measured by Total Antioxidant Capacity Assay kit. The antioxidants were dissolved in distilled water, and diluted to several concentrations (2 mM, 1 mM, 0.25 mM, 0.125 mM, and 0.0625 mM) to prepare assay samples. The assay was carried out according to the instruction manual.

・Assay procedure

Pipette 5 µL blank (distilled water), standard (1 mM ascorbic acid) or samples into each wells in a clear bottom 96 well plate.

Blank / standard / sample 5 µL

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Add 150 µL of R-A (buffer solution) to each well and incubate at room temperature for 5 min.

R-A (buffer solution) 150 µL

↓

Read the absorbance at 490 nm.
→OD1

OD 490 nm・・・・・OD1

↓

Add 70 µL of R-B (cupric ion solution) to each well and incubate at room temperature for 5 min.

R-B (cupric ion solution) 70 µL

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Add 30 µL of R-C (stop solution) to each well.

R-C (stop solution) 30 µL

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Read the absorbance at 490 nm.
→OD2

OD 490 nm・・・・・OD2

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Calculations

Calculate TAC (copper reduction ability) of the samples by comparing the ΔOD of the samples to the ΔOD of standard (1 mM ascorbic acid).

$\Delta OD_{standard} = (OD2_{standard} - OD1_{standard}) - (OD2_{blank} - OD1_{blank})$

$\Delta OD_{sample} = (OD2_{sample} - OD1_{sample}) - (OD2_{blank} - OD1_{blank})$

Copper reduction ability

$$TAC\ (mM) = \frac{\Delta OD_{sample}}{\Delta OD_{standard}} \times 2$$

Total antioxidant capacities of various antioxidants