Taurine Microplate Assay Kit

User Manual

Catalog # CAK1249

(Version 1.4A)

Detection and Quantification of Taurine Content in Tissue extracts, Cell lysate, Cell culture media and Other biological fluids Samples.

For research use only. Not for diagnostic or therapeutic procedures.

I. INTRODUCTION

Taurine is a sulfur amino acid, an essential amino acid in pre-term and newborn infants of humans and many other species. Taurine is abundant in the brain, heart, breast, gallbladder and kidney and has important roles in health and disease in these organs. Taurine has many diverse biological functions serving as a neurotransmitter in the brain, a stabilizer of cell membranes and a facilitator in the transport of ions such as sodium, potassium, calcium and magnesium. Taurine is highly concentrated in animal and fish protein, which are good sources of dietary taurine. Taurine has many important metabolic roles. Supplements can stimulate prolactin and insulin release.

Taurine Microplate Assay Kit provides a convenient tool for sensitive detection of Taurine in a variety of samples. Taurine reacts with acetylacetone to form a yellow complex. The intensity of the product color, measured at 400 nm, is proportional to the Taurine concentration in the sample.

II. KIT COMPONENTS

Component	Volume	Storage
96-Well Microplate	1 plate	
Assay Buffer I	30 ml x 3	4 °C
Assay Buffer II	30 ml x 1	4 °C
Dye Reagent A	10 ml x 1	4 °C
Dye Reagent B	0.6 ml x 1	4 °C
Standard	Powder x 1	4 °C
Plate Adhesive Strips	3 Strips	
Technical Manual	1 Manual	

Note:

Dye Reagent Working Solution: add 0.6 ml Dye Reagent B into Dye Reagent A, mix before use.

Standard: add 1 ml distilled water to dissolve before use; then add 0.5 ml into 0.5 ml distilled water, mix, the concentration will be 10 mmol/L.

III. MATERIALS REQUIRED BUT NOT PROVIDED

1. Microplate reader to read absorbance at 400 nm
2. Distilled water
3. Pipettor, multi-channel pipettor
4. Pipette tips
5. Mortar
6. Centrifuge
7. Timer
8. Convection oven

IV. SAMPLE PREPARATION

1. For cell and bacteria samples

Collect cell or bacteria into centrifuge tube, discard the supernatant after centrifugation, add 0.75 ml Assay Buffer I for 5×10^6 cell or bacteria, sonicate (with power 20%, sonicate 3s, interval 10s, repeat 30 times); then add 0.25 ml Assay Buffer II, centrifuged at 10,000g for 10 minutes, take the supernatant into a new centrifuge tube for detection.

2. For tissue samples

Weigh 0.1 g tissue, homogenize with 0.75 ml Assay Buffer I, incubate at 40 °C water bath for 30 minutes; then add 0.25 ml Assay Buffer II, centrifuged at 10,000g for 10 minutes, take the supernatant into a new centrifuge tube for detection.

3. For serum or plasma samples

Add 0.75 ml Assay Buffer I into 0.5 ml samples, mix; centrifuged at 10,000g for 10 minutes, take the supernatant into a new centrifuge tube, then add 0.25 ml Assay Buffer II, mix.

V. ASSAY PROCEDURE

Add following reagents into the microplate:

Reagent	Sample	Standard	Blank
Sample	100 µl	--	--
Standard	--	100 µl	--
Distilled water	--	--	100 µl
Dye Reagent Working Solution	100 µl	100 µl	100 µl
Mix, cover the plate adhesive strip, put the plate into the convection oven, 90 °C for 15 minutes. When cold, record absorbance measured at 400 nm.			

Note:

1) Perform 2-fold serial dilutions of the top standards to make the standard curve.

2) The concentrations can vary over a wide range depending on the different samples. For unknown samples, we recommend doing a pilot experiment & testing several doses to ensure the readings are within the standard curve range.

3) If any precipitate, please add the samples into the microcentrifuge tube, centrifuged at 10,000g for 10 minutes; then add the supernatant into the microplate to read the result.

4) Reagents must be added step by step, can not be mixed and added together.

VI. CALCULATION

1. According to the weight of sample

$$\text{Taurine } (\mu mol/g) = (C_{Standard} \times V_{Standard}) \times (OD_{Sample} - OD_{Blank}) / (OD_{Standard} - OD_{Blank}) / (W \times V_{Sample} / V_{Assay})$$

$$= 10 \times (OD_{Sample} - OD_{Blank}) / (OD_{Standard} - OD_{Blank}) / W$$

2. According to the quantity of cells or bacteria

$$\text{Taurine } (\mu mol/10^4) = (C_{Standard} \times V_{Standard}) \times (OD_{Sample} - OD_{Blank}) / (OD_{Standard} - OD_{Blank}) / (N \times V_{Sample} / V_{Assay})$$

$$= 10 \times (OD_{Sample} - OD_{Blank}) / (OD_{Standard} - OD_{Blank}) / N$$

3. According to the volume of sample

$$\text{Taurine } (\mu mol/ml) = (C_{Standard} \times V_{Standard}) \times (OD_{Sample} - OD_{Blank}) / (OD_{Standard} - OD_{Blank}) / V_{Sample} \times 3$$

$$= 30 \times (OD_{Sample} - OD_{Blank}) / (OD_{Standard} - OD_{Blank})$$

$C_{Standard}$: the concentration of standard, 10 mmol/L = 10 μmol/ml;

W: the weight of sample, g;

N: the quantity of cell or bacteria, $N \times 10^4$;

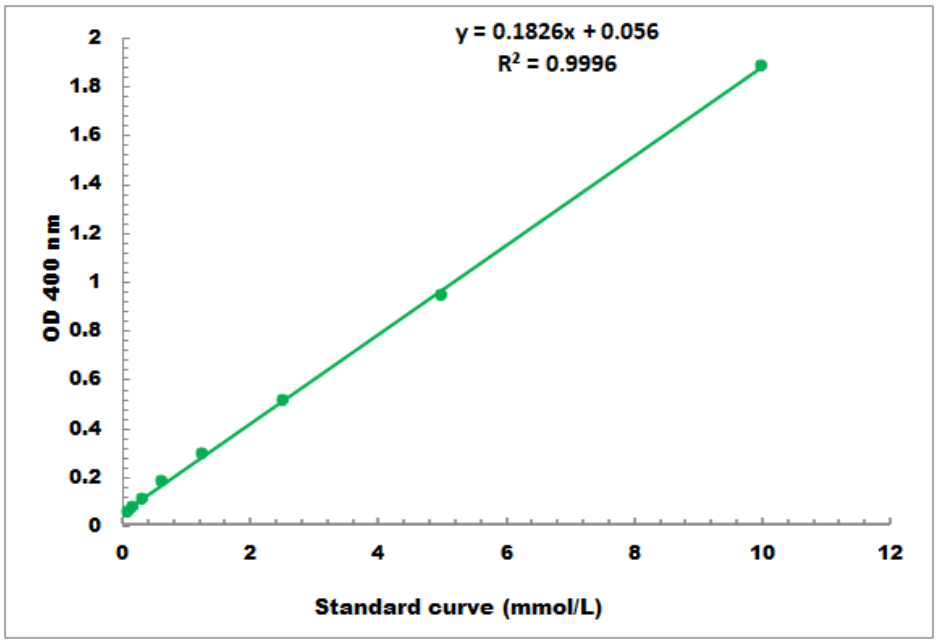
$V_{Standard}$: the volume of standard, 0.1 ml;

V_{Sample}: the volume of sample, 0.1 ml;

V_{Assay}: the volume of Assay Buffer I and Assay Buffer II, 1 ml.

VII. TYPICAL DATA

The standard curve is for demonstration only. A standard curve must be run with each assay.



Detection Range: 0.1 mmol/L - 10 mmol/L

VIII. TECHNICAL SUPPORT

For troubleshooting, information or assistance, please go online to www.cohesionbio.com or contact us at techsupport@cohesionbio.com

IX. NOTES