Selenium Microplate Assay Kit

Catalog # AS0163

Detection and Quantification of Selenium Content in Urine, Serum, Plasma, Tissue extracts, Cell lysate, Cell culture media, Other biological fluids Samples.

This instruction must be read in its entirety before using this product.

For research use only, Not for use in diagnostic procedures.

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I. INTRODUCTION

Selenium naturally appears in water and some foods. While people only need a very small amount, selenium plays a key role in the metabolism. Selenium has attracted attention because of its antioxidant properties. Antioxidants protect cells from damage. Evidence that selenium supplements may reduce the odds of prostate cancer has been mixed, but most studies suggest there is no real benefit. Selenium does not seem to affect the risk of colorectal or lung cancer.

Selenium Microplate Assay Kit is designed to measure selenium directly in biological samples without any pretreatment. The intensity of the color, measured at 520nm, is directly proportional to the selenium concentration in the sample.

II.KIT COMPONENTS

Component	Volume	Storage
96-Well Microplate	1 plate	
Assay Buffer	30 ml x 4	4 °C
Reaction Buffer I	Powderx 1	4 °C
Reaction Buffer I Diluent	5 ml x 1	4 °C
Reaction Buffer II	Powderx 1	4 °C
Dye Reagent	Powderx 1	4 °C
Standard	Powderx 1	4 °C
Technical Manual	1 Manual	

Note:

Reaction Buffer I:add 5 mlReaction Buffer I Diluent to dissolve before use.

Reaction Buffer II:add 5 ml distilled water to dissolve before use.

Dye Reagent:add9 ml distilled waterto dissolve before use.

Standard:add 1 mldistilled water to dissolve before use; then add 0.01 ml into 0.99mldistilled water. The concentration will be 0.3 mmol/L, store at 4 °C.

III. MATERIALS REQUIRED BUT NOT PROVIDED

1. Microplate reader to read absorbance at 520 nm
2. Distilled water
3. 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 1mlAssay buffer for 5×10^6 cell or bacteria, sonicate (with power 20%, sonication 3s, intervation 10s,repeat 30 times); centrifuged at 8000g 4°C for 10minutes, take the supernatant into a new centrifuge tube for detection.

2.For tissue samples

Weigh0.1 g tissue, homogenize with 1mlAssay buffer on ice, centrifuged at 8000g 4°C for 10minutes, take the supernatant into a new centrifuge tube for detection.

3. For liquid samples

Detect directly.

V. ASSAY PROCEDURE

Add following reagents intothe microplate:

Reagent	Sample	Standard	Blank
Sample	10 µl	--	--
Standard	--	10 µl	--
Distilled water	--	--	10 µl
Reaction Buffer I	50 µl	50 µl	50 µl
Reaction Buffer II	50 µl	50 µl	50 µl
Dye Reagent	90 µl	90 µl	90 µl
Mix, put the plate into the convection oven,90°C for 10minutes. When cold, record absorbance measured at 520 nm.			

VI. CALCULATION

1. According to the protein concentration of sample

$Se(\mu mol/mg) = (C_{Standard} \times V_{Standard}) \times (OD_{Sample} - OD_{Blank}) / (OD_{Standard} - OD_{Blank}) / (V_{Sample} \times C_{Protein})$

$= 0.3 \times (OD_{Sample} - OD_{Blank}) / (OD_{Standard} - OD_{Blank}) / C_{Protein}$

2. According to the quantity of cells or bacteria

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

$= 0.3 \times (OD_{Sample} - OD_{Blank}) / (OD_{Standard} - OD_{Blank}) / N$

3. According to the weight of sample

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

$= 0.3 \times (OD_{Sample} - OD_{Blank}) / (OD_{Standard} - OD_{Blank}) / W$

4. According to the volume of sample

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

$= 0.3 \times (OD_{Sample} - OD_{Blank}) / (OD_{Standard} - OD_{Blank})$

V_{Sample}: the volume of sample, 0.01 ml;

$V_{Standard}$: the volume of standard, 0.01 ml;

V_{Assay}: the volume of Assay buffer, 1 ml;

$C_{Standard}$: the standard concentration, 0.3 mmol/L = 0.3μmol/ml;

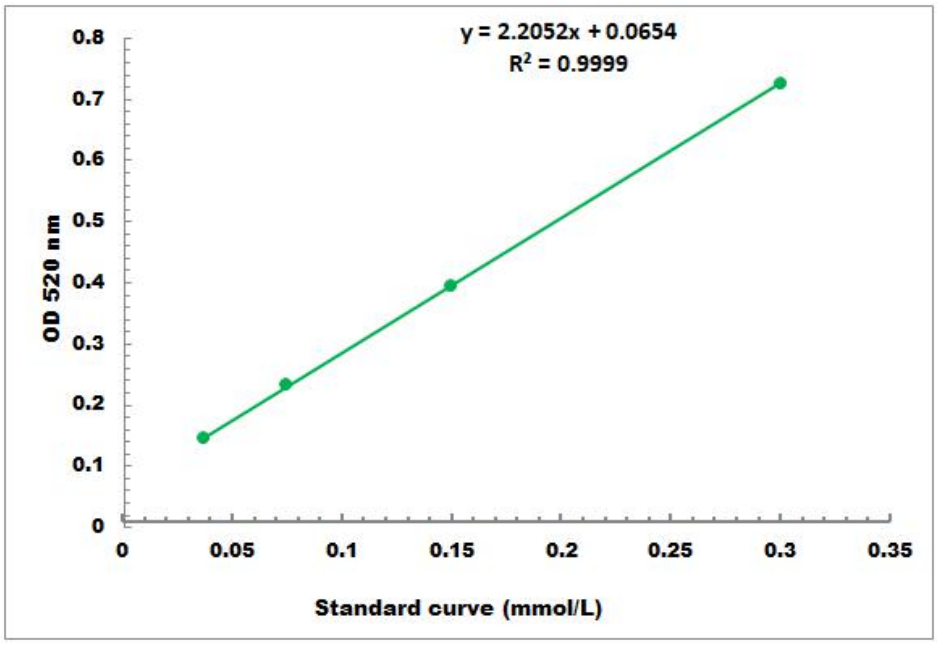
$C_{Protein}$: the protein concentration, mg/ml;

W: the weight of sample, g;

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

VII. TYPICAL DATA

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



Detection Range: 0.03 mmol/L - 0.3mmol/L

VIII. TECHNICAL SUPPORT

For troubleshooting, information or assistance, please go online to www.sabbiotech.cn or contact us at techcn@signalwayantibody.com

IX. NOTES