



## **Soluble Sugar Assay Kit**

ARG83397 Soluble Sugar Assay Kit can be used to measure Soluble Sugar in Serum, plasma, cell culture media, tissue extracts, cell lysate and other biological fluids.

Catalog number: ARG83397

Package: 96 wells

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

## **TABLE OF CONTENTS**

<b>SECTION</b>	<b>Page</b>
INTRODUCTION .....	3
PRINCIPLE OF THE ASSAY .....	3
MATERIALS PROVIDED & STORAGE INFORMATION.....	3
MATERIALS REQUIRED BUT NOT PROVIDED.....	3
TECHNICAL HINTS AND PRECAUTIONS .....	4
SAMPLE COLLECTION & STORAGE INFORMATION .....	4
REAGENT PREPARATION .....	4
ASSAY PROCEDURE .....	5
CALCULATION OF RESULTS.....	6
EXAMPLE OF TYPICAL RESULT.....	7

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### INTRODUCTION

Soluble sugar have dual role in plants. They are involved in various metabolic events and act as molecule signals regulating different genes, especially those involved in photosynthesis, sucrose metabolism and osmolyte synthesis.

### PRINCIPLE OF THE ASSAY

The ARG83397 Soluble Sugar Assay Kit determined Soluble Sugar by the anthrone in various samples. The increase in absorbance at 620 nm is directly proportional to the content.

### MATERIALS PROVIDED & STORAGE INFORMATION

Store the unopened kit at 2-8°C. Use the kit before expiration date.

Component	Quantity	Storage
Microplate	1 X 96-well plate	
Standard	1 vial (lyophilized)	4°C
Reaction Dye	1 vial (lyophilized)	4°C
Reaction Dye Diluent	15 ml	4°C

### MATERIALS REQUIRED BUT NOT PROVIDED

- Microplate reader capable of measuring absorbance at 620nm
- Pipettes and pipette tips
- Deionized or distilled water

### TECHNICAL HINTS AND PRECAUTIONS

- Wear protective gloves, clothing, eye, and face protection especially while handling blood or body fluid samples.
- Store all component at 4°C.
- Reaction Dye should be store at 4°C and protect from light.
- Briefly spin down the reagents before use.
- It is highly recommended that the standards and samples be assayed in at least duplicates.
- Change pipette tips between the addition of different reagent or samples.

### SAMPLE COLLECTION & STORAGE INFORMATION

The sample collection and storage conditions listed below are intended as general guidelines. Sample stability has not been evaluated.

**Tissue lysate-** Weigh out 0.1 g tissue, homogenize with 1 ml distilled water, transfer it into microcentrifuge tubes, incubate at 80 °C for 30 minutes, centrifuged at 10000g for 10 minutes, take the supernatant into a new centrifuge tube for detection.

Note: For other liquid sample, it can be assayed directly.

### REAGENT PREPARATION

- **Standard:** Add **1 ml** of **distilled water** to yield **10000 µg/ml** stock, then add **20 µl** into **980 µl** of **distilled water** to yield **200 µg/ml** standard. Perform 2-fold serial dilution of the top standards to make the standard curve.
- **Reaction Dye:** Reconstitute the Substrate with **15 ml** of **Reaction Dye Diluent**. Allow the Reaction Dye keep on bench for few minutes. Make sure the Reaction Dye is dissolved completely and mixed thoroughly before use. Keep the reconstituted the Substrate on ice before use.
- **Sample:** If the measuring absorbance of samples is higher than the standard, dilute the samples with **distilled water** before assay and assay again.

### ASSAY PROCEDURE

Standards and samples should be assayed in at least duplicates.

1. Sample wells: Add **50 µl** per **samples** into each microplate.
2. Standard wells: Add **50 µl** of **Standard** into microplate.
3. Add **150 µl** of **Reaction Dye** per well into All wells.
4. Mix well. Incubate at **90°C** for **15 min**.
5. Read the OD with a microplate reader at **620nm**.

#### Summary of Soluble Sugar Procedure

Reagent	Sample	Standard	Blank
Sample	50 µl	-	-
Standard	-	50 µl	-
Distilled water	-	-	50 µl
Reaction Dye	150 µl	150 µl	150 µl

Mix well. Incubate at **90°C** for **15 min**. Read the OD at **620nm**.

### CALCULATION OF RESULTS

1. Calculate the average absorbance values for each set of samples, standard, positive control, control and blank.

2. Calculation:

A. Definition:

$C_{\text{Standard}}$ : the standard concentration, 200  $\mu\text{g/ml}$ ;

$W$ : the weight of sample, g;

$V_{\text{Sample}}$ : the volume of reaction sample, 50  $\mu\text{l}$  = 0.05 ml;

$V_{\text{standard}}$ : the volume of standard sample, 50  $\mu\text{l}$  = 0.05 ml;

B. Formula:

a ). According to the volume of sample

Soluble Sugar ( $\mu\text{g/ml}$ ) =

$$\begin{aligned} & [(C_{\text{Standard}} \times V_{\text{standard}}) \times (OD_{\text{Sample}} - OD_{\text{Blank}})] / [(OD_{\text{Standard}} - OD_{\text{Blank}}) \times V_{\text{Sample}}] \\ & = 200 \times (OD_{\text{Sample}} - OD_{\text{Blank}}) / (OD_{\text{Standard}} - OD_{\text{Blank}}) \end{aligned}$$

b). According to the concentration of sample

Soluble Sugar ( $\mu\text{g/g}$ ) =

$$\begin{aligned} & [(C_{\text{Standard}} \times V_{\text{standard}}) \times (OD_{\text{Sample}} - OD_{\text{Blank}})] / [(OD_{\text{Standard}} - OD_{\text{Blank}}) \times (V_{\text{Sample}} \times \\ & W / V_{\text{Assay}})] \\ & = 200 \times (OD_{\text{Sample}} - OD_{\text{Blank}}) / [(OD_{\text{Standard}} - OD_{\text{Blank}}) \times W] \end{aligned}$$

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3 Detection range:

The detection range is from 2  $\mu\text{g/ml}$  - 200  $\mu\text{g/ml}$ .

4. If the samples have been diluted, the calculated concentration must be further converted by the appropriate dilution factor according to the sample preparation procedure as described above.

### EXAMPLE OF TYPICAL RESULT

The following data is for demonstration only and cannot be used in place of data generations at the time of assay. Please note this data is for demonstration only and serial diluted standards are not necessary for this kit.

