

# GLUCOSE-FRUCTOSE AUTO

125 ml

## INTENDED USE

Reagent for simultaneous enzymatic determination of glucose and fructose in foodstuff and other sample material, on automated photometric systems.

## PRINCIPLE OF THE METHOD

D-Glucose and D-fructose react with ATP in the presence of hexokinase, producing glucose-6-phosphate and fructose-6-phosphate; the latter is then converted to glucose-6-phosphate by PGI (phosphoglucose isomerase). The total glucose-6-phosphate reduces the dinucleotide in the presence of G6P-DH. Absorbance increase at 340 nm is proportional to the sum of concentrations of glucose and fructose present in the sample, and can be measured photometrically.

## KIT COMPONENTS

The components of the kit are stable until expiration date on the label.

Keep away from direct light sources.

### GF AUTO R1: 2 x 50 ml (liquid) blue cap

Composition: Buffer pH 7.8, hexokinase > 1 kU/l, glucose-6-phosphate dehydrogenase > 2 kU/l, preservatives.

### GF AUTO R2: 1 x 25 ml (liquid) red cap

Composition: Buffer pH 7.0, dinucleotide 11 mM, ATP 11 mM, PGI > 3 kU/l, preservatives.

Store all components at 2-8°C.

In vitro use only.

## MATERIALS REQUIRED BUT NOT SUPPLIED

Current laboratory instrumentation. Spectrophotometer UV/VIS with thermostatic cuvette holder. Automatic micropipettes. Glass or high quality polystyrene cuvettes. Standard solution.

Standard solution of Glucose-fructose 20 g/l (code SQPE053233) is available on request. Please contact customer service for further information.

## REAGENT PREPARATION

Use separate reagents.

Stability: until expiration date on the label at 2-8°C.

## PRECAUTIONS

Reagent may contain some non-reactive and preservative components. It is suggested to handle carefully it, avoiding contact with skin and swallow.

Perform the test according to the general "Good Laboratory Practice" (GLP) guidelines.

## SPECIMEN

Wine or any foodstuff once its utilization has been tested. Red wine samples can be analyzed without decolorization.

## PROCEDURE

|   |        |          |        |
|---|--------|----------|--------|
| Wavelength:   | 340 nm |          |        |
| Lightpath:  | 1 cm   |          |        |
| Temperature:  | 37°C   |          |        |
| dispense:   | blank  | standard | sample |
| reagent R1  | 2 ml   | 2 ml     | 2 ml   |
| water   | 25 µl  | -        | -      |
| standard  | -      | 25 µl    | -      |
| sample  | -      | -        | 25 µl  |
| Mix, incubate at 37°C for 2 minutes.<br>Read absorbances of standard (As <sub>1</sub> ) and sample (Ac <sub>1</sub> ) against reagent blank.  |        |          |        |
| dispense:   | blank  | standard | sample |
| reagent R2  | 500 µl | 500 µl   | 500 µl |
| Mix, incubate at 37°C for 10 minutes.<br>Read absorbances of standard (As <sub>2</sub> ) and sample (Ac <sub>2</sub> ) against reagent blank. |        |          |        |

## RESULTS CALCULATION

$$\text{Glucose-fructose g/l} = \frac{Ac_2 - (0.8 \times Ac_1)}{As_2 - (0.8 \times As_1)} \times \text{standard value}$$

## TEST PERFORMANCE

### Specificity

The method is specific for glucose and fructose.

### Linearity

The method is linear up to 8 g/l.

If the limit value is exceeded, it is suggested to dilute the sample 1+4 with distilled water and to repeat the test, multiplying the result by 5.

### Precision

#### White wine

|                    |            |          |      |
|--------------------|------------|----------|------|
| intra-assay (n=10) | mean (g/l) | SD (g/l) | CV%  |
| sample             | 2.033      | 0.019    | 0.92 |
| inter-assay (n=20) | mean (g/l) | SD (g/l) | CV%  |
| sample             | 2.031      | 0.068    | 3.37 |

#### Red wine

|                    |            |          |      |
|--------------------|------------|----------|------|
| intra-assay (n=8)  | mean (g/l) | SD (g/l) | CV%  |
| sample             | 2.881      | 0.016    | 0.55 |
| inter-assay (n=20) | mean (g/l) | SD (g/l) | CV%  |
| sample             | 2.867      | 0.120    | 4.20 |

## WASTE DISPOSAL

This product is made to be used in professional laboratories.

P501: Dispose of contents according to national/international regulations.

## REFERENCES

H.U.Bergmeyer ed. 3, "Methods of enzymatic analysis" vol. VI pp. 163-171.

Tietz Textbook of Clinical Chemistry, Second Edition, Burtis-Ashwood (1994).

## MANUFACTURER

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## SYMBOLS

|   |                                  |
|---|----------------------------------|
|  | lot of manufacturing             |
|  | code number                      |
|  | storage at temperature interval  |
|  | expiration date (year/month)     |
|  | warning, read enclosed documents |
|  | read the directions              |