

Quantitative determination of high molecular weight β-Glucan from barley in malt-mash and wort (EBC 4.16.3, MEBAK 3.1.4.9.2). Two test-kits are available for respectively 40 tests (E3500) and 160 tests (E3550).

Store in the dark at room temperature

For in vitro use only

## Principle

Colorimetric assay for the quantitative determination of high molecular weight β-Glucan from barley in malt-mash and wort. The test is identical to the **GlucaTest® Rapid** assay from the company NovaBiotec GmbH, whose production has been transferred to R-Biopharm AG. The test principle has been recognized under EBC 4.16.3 (High Molecular Weight β-Glucan Content of Malt Wort: Spectrophotometric Method), MEBAK 3.1.4.9.2 (Hochmolekulares β-Glucan Kolorimetrische Methode) and ASBC (β-Glucan in wort – Spectrophotometric method).

Two different sizes are available for this kit:

- GlucaTest S125 (E3500) = 1 x 125 ml solution A + calibrator set
- GlucaTest L500 (E3550) = 4 x 125 ml solution A + calibrator set

## Assay specifications

Wavelength: 550 nm (± 5 nm)  
 Light path: 1.00 cm (glass; plastic)  
 Temperature: 18 to 30°C  
 Method: end-point measurement  
 Reaction time: 30 minutes  
 Measurement: against air or against water  
 Range: 100 – 500 mg/L β-Glucan; samples must be tested directly, they cannot be diluted

## Reagents

- # 1: Solution A: 1 bottle with approx. 125 ml (E3500) or 4 bottles with approx. 125 ml (E3550)
- # 2: Calibrator set: 6 vials with approx. 1.0 ml each (0, 100, 200, 300, 400 and 500 mg/l of β-Glucan)

All reagents are ready for use. The reagents are stable at 20-25°C up to the expiry date shown on the package, if not contaminated during handling. If stored erroneously at 4°C, let the reagents reach the laboratory temperature (20 - 25°C) before use. Mix gently before pipetting. Avoid contamination during handling. Close immediately after handling.

This kit may contain hazardous substances. For hazard notes on the contained substances, please refer to the appropriate material safety data sheets (MSDS) for this product, available online at [www.r-biopharm.com](http://www.r-biopharm.com). After use, the reagents can be disposed of with the laboratory waste. Packaging materials may be recycled.

## Sample preparation

The method for sample preparation has been described under EBC 4.5.1 (Extract of malt: Congress mash). It is mandatory to follow it if the present kit should be used according to EBC 4.16.3.

For turbid or extremely hazy samples, a filtration step is required.

For the determination of the whole content of β-Glucans (soluble and insoluble parts), it is recommended to heat the samples for 15 min at 80°C to solubilize gel-formed fractions of β-Glucans; after cooling down to room temperature, a centrifugation or filtration step might be necessary before testing the sample.

## Test procedure

Pipette into cuvettes*:	Calibrators (1 cuvette each)	Samples
Calibrators (1-6)	0.200 ml	-
Sample	-	0.200 ml
Solution A	3.000 ml	3.000 ml

Mix with plastic spatula, incubate for 30 min at room temperature. Measure absorption (A<sub>1</sub>) at 550 nm

\*Before pipetting a sample/calibrator into the cuvette, first rinse the pipette tip once or twice with the calibrator/sample

## Calculation of results

Plot the calibration curve using the absorbance of the calibrators 1 to 6. The β-Glucan content of the samples can be directly read from the curve or calculated from the resulting equation (linear regression). An Excel sheet is available on request.

Here an example with typical absorbances:

Calibrator	β-Glucan (mg/l)	A <sub>1</sub>	minus Blank
1	0	0.850	0.000
2	100	0.973	0.123
3	200	1.081	0.231
4	300	1.184	0.334
5	400	1.280	0.430
6	500	1.377	0.527

The specific values of each lot can be seen in the corresponding certificate of analysis.

## Notes

1. The test has been developed for manual testing, there is no application for automated instruments
2. The test has been developed by the company NovaBiotec GmbH under the name GlucaTest® Rapid assay (Gk0230d), and production has been transferred to R-Biopharm AG. The raw materials and the production procedures for the original GlucaTest® Rapid assay and the new Enzytec Color Gluca Test kits are identical. Only the packaging has been slightly changed in order to fit to the new production facilities.

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