PROTEIN STABILITY

1 x 50 ml

INTENDED USE

Reagent for colorimetric determination of proteins in foodstuff and other sample material.

PRINCIPLE OF THE METHOD

The protein determination is based on the formation of a complex between the chromogen Brilliant Blue G and proteins of wine. The sample is pretreated with a basic solution to facilitate the solubilization of proteins. The formation of complex protein-chromogen produces a decrease in absorbance at 465 nm and an increase in absorbance at 595 nm. Absorbance ratio 595/465 is a function of protein concentration in the sample. The assay provides useful information about the process of protein stabilization.

KIT COMPONENTS

The components of the kit are stable until expiration date on the label.
Keep away from direct light sources.

PROT R1: **1 x 12.5 ml (liquid) blue cap**
Composition: sodium hydroxide, preservatives.

PROT R2: **1 x 50 ml (liquid) red cap**
Composition: phosphoric acid > 8 %, preservatives.

PROT BL: **1 x 25 ml (liquid) white cap**
Composition: tartaric acid > 5 g/l, preservatives and stabilizers.

Standard: **proteins 1000 mg/l - 10 ml**

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. Glass or high quality polystyrene cuvettes.

REAGENT PREPARATION

The liquid reagents are ready-to-use.
Gently shake the vial of reagent R1 prior to use.
Stability of reagents after first opening: preferably within 60 days at 2-8°C away from direct light sources.

PRECAUTIONS

PROT R1: Danger. Causes severe skin burns and eye damage (H314). Wear protective gloves. Eye protection (P280). IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing (P305+P351+P338). IF ON SKIN (or hair): take off immediately all contaminated clothing. Rinse skin with water (P303+P361+P353).

PROT R2: Warning. May be corrosive to metals (H290). Causes severe skin burn and eye damage (H314). Causes serious eye damage (H318). Causes damage to organs (H370). Do not breathe vapours (P260). Wear protective gloves/eye protection (P280). IF SWALLOWED: rinse mouth. Do NOT induce vomiting (P301+P330+P331).IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing (P305+P351+P338). IF ON SKIN (or hair): take off immediately all contaminated clothing. Rinse skin with water (P303+P361+P353). Immediately call a POISON CENTER/doctor (P310).

PROT BL: It is not classified as hazardous.

Standard: It is not classified as hazardous.

SPECIMEN

White wine.
In rose wines, due to the presence of polyphenols there is no linearity between protein concentration and absorbance, thus assay can only give an approximate result.

PROCEDURE

Wavelength: 465 nm and 595 nm
Lightpath: 1 cm
Temperature: 37°C

dispense:	reagent blank	standard	sample
water	50 µl		50 µl
standard		50 µl	
sample			500 µl
reagent R1	50 µl	50 µl	50 µl
blank	500 µl	500 µl	
Mix, incubate at 37°C for 5 minutes.			
reagent R2	2 ml	2 ml	2 ml
Mix, incubate at 37°C for 5 minutes. Read absorbance of standard (As), reagent blank (Ar) and sample (Ac) against distilled water, at both 465 nm and 595 nm.			

RESULTS CALCULATION

$(Ar)_{595}$ / $(Ar)_{465}$ = A
$(As)_{595}$ / $(As)_{465}$ = B
$(Ac)_{595}$ / $(Ac)_{465}$ = C

Proteins mg/l = [(C - A) / (B - A)] x 100

NOTE: the kit can be used on automated instrumentation. For applications contact technical assistance.

TEST PERFORMANCE

Specificity
The method is specific for proteins.

Linearity
The method is linear up to 200 mg/l.
If the limit value is exceeded, it is suggested to dilute the sample 1 + 4 with reagent BLANK (100 µl sample + 400 µl reagent BLANK) and to repeat the test, multiplying the result by 5.

Precision
White wine:
intra-assay (n=10)

	mean (mg/l)	SD (mg/l)	CV%
sample	16.71	0.38	2.26

inter-assay (n=20)

	mean (mg/l)	SD (mg/l)	CV%
sample	17.05	1.23	7.19

WASTE DISPOSAL

This product is made to be used in professional laboratories.
P501: Dispose of contents according to national/international regulations.

REFERENCES

M. M. Bradford, Anal. Biochem., 72, 248. (1976);
J. M. Murphey, J. R. Powers and S. E. Spayd, Am. J. Enol. Vitic., 40 (3), 189 - 193. (1989);
M. R. Smith, M. H. Penner, S. E. Bennett and A. T. Bakalinsky, J. Agric. Food Chem., 59, 6871 - 6876. (2011).

MANUFACTURER

Steroglass S.r.l.
Strada Romano di Sopra 2/C
06132 San Martino in Campo (PG)
tel 075 609091
fax 075 6090950
e-mail: info@steroglass.it
website: http://www.steroglass.it

SYMBOLS

lot of manufacturing

code number


storage at temperature interval


expiration date (year/month)


warning, read enclosed documents


read the directions