Specification

Coomassie® Brilliant Blue R-250 (C.I. 42660) A1092

Physical Description:	Solid
Product Code:	A1092
Product Name:	Coomassie® Brilliant Blue R-250 (C.I. 42660)
Headline Comment:	® registered trademark of Imperial Industries PLC
Specifications:	E 1 %,1 cm, $\lambda_{max.}$: >300 (pH 7.0) $\lambda_{max.}$ (buffer pH 7.0): 554 - 563 nm
WGK:	1
Storage:	RT
Molecular Formula:	$C_{45}H_{44}N_3NaO_7S_2$
M:	825.98 g/mol
CAS:	6104-59-2
EINECS:	228-060-5
CS:	32041200

Comment

Coomassie® Brilliant Blue R-250 is one of the most commonly used stains for proteins, after their separation by polyacrylamide gel electrophoresis. The protein-dye complex has an absorption maximum at 549 nm, the dye without protein at 555 nm (in 0.01 M citrate buffer, pH 3). The intensity in staining of proteins probably depends on the basicity of a protein (5). Per positively charged amino acid approximately 1.5 - 3 molecules of Coomassie® will be bound. This variation complicate the exact protein determination with albumin as a standard, since this protein contains more basic amino acids than many other proteins (5).There do exist many protocols for sensitive staining procedures with Coomassie® (e. g. ref. 3, 4). The sensitivity reaches a limit at 25 ng protein (4). We recommend the following protocol\:I. Staining solution\: 0.1 % Coomassie® Brilliant Blue R-250 (Prod.-No. A1092)20 % methanol (or ethanol)10 % acetic acidThe SDS gel (without 'stacking gel') is stained for 1 hour at 60°C or for 2 hours at 50°C or over night at RT.II. Destaining solution\: 20 % methanol (or ethanol)10 % acetic acidDestain the gel for 3 - 4 hours at 50 - 60°C. Add some sponges.Subsequently wash the gel for 15 minuts in water and dry under vacuum at 60°C for 2 - 3 hours.

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Bibliography

(1)Fazekas De St. Groth, S. *et al.* (1963) *Biochim. Biophys. Acta* **71**, 377-391Two new staining procedures for quantitative estimation of proteins on electrophoresis strips. (2)Chrambach, A. *et al.* (1967) *Anal. Biochem.* **20**, 150-154A procedure for rapid and sensitive staining of protein fractionated by polyacrylamide gel electrophoresis. (3)Neuhoff, V. *et al.* (1988) *Electrophoresis* **9**, 255-262Improved staining of proteins in polyacrylamide gels including isoelectric focusing gels with clear background at nanogram sensitivity using Coomassie® Briliant Blue G-250 and R-250. (4)Choi, J.-K. *et al.* (1996) *Anal. Biochem.* **236**, 82-84Modified Coomassie® Blue staining of proteins in polyacrylamide gels with Bismark brown. (5)Tal, M. *et al.* (1985) *J. Biol. Chem.* **260**, 9976-9980Why does Coomassie® Brilliant Blue R Interact Differently with Different Porteins?

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