

APC [Allophycocyanin]

Cat #: B-CHM301

Size: 1mg/5mg

Storage: Store at 4°C protected from light.

Product Introduction

Allophycocyanin (APC) is a phycobiliprotein isolated from *Spirulina* sp., a blue-green alga. Like other phycobiliproteins, APC is fluorescent, with an extremely high absorptivity and high quantum efficiency. It is a protein which can be easily linked to antibodies and other proteins by conventional protein cross-linking techniques without altering its spectral characteristics. Allophycocyanin is the least stable among the major phycobiliproteins, susceptible to dissociation at low concentrations including concentrations at which some assays are performed.

Product Properties

Form: APC is supplied with in 60% ammonium sulfate, 50 mM potassium phosphate, 75 mM NaCl (pH 7.0).

Spectral properties: Ex / Em = 652 nm / 662 ± 2 nm

Purity: A650/A280 >5.4, A650/A620 >1.6

Methods

1. Centrifuge APC ammonium sulfate solution at 10,000 rpm for 10 min(4°C), discard the supernatant, dissolve the precipitate in PBS-EDTA buffer and then desalinate (desalination column or ultrafiltration) to a quantitative concentration of 5-10mg/mL.
2. Continuously dilute by PBS.
3. To calculate the quality and concentration of APC, must measure the absorbance of stock solution dilution range 0.3-0.8 at 650 nm.

Concentration & purity

1. Determined protein concentration using extinction coefficient:

$$\text{Concentration (mg/ml)} = \frac{\text{Absorbance at } \lambda_{\text{max}} \text{ (OD 650 nm)}}{\text{Extinction coefficient (700000 M}^{-1} \text{ cm}^{-1}) \times \text{Pathlength (cm)}} \times \text{Molecular weight (105000 g/mol)} \times \text{Dilution factor}$$

2. A₆₅₀/A₂₈₀ indicates purity of the preparation with respect to most forms of contaminating protein. Absorbance at 280 nm in these preparations is primarily due to aromatic amino acids, and thus is roughly proportional to the overall concentration of protein in solution, including Allophycocyanin (APC).

3. Example:

Dilution factor = 64 times

A₆₅₀ = 0.617; A₆₂₀ = 0.390; A₂₈₀ = 0.117

APC concentration = (0.617 / (700000 * 1)) * 105000 * 64 = 11.84 mg/ml

