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ProductInformation

B-Phycoerythrin
from *Porphyridium cruentum*

Product Number **P 1286**
Storage Temperature 2-8 °C

Product Description

Molecular weight: 265 kDa (by gel filtration);[1] 17.3 kDa (α, β subunits), 30 kDa (γ subunit)
λ_{max}: 544 nm[1]
Extinction coefficient: E^{mM} = 5.26 (0.1 M phosphate buffer, pH 7.0)
Fluorescent properties:
Excitation wavelength: 515 nm[2]
Emission wavelength: 577 nm[2]

This product is member of the phycobiliproteins, which are a family of water soluble fluorescent proteins derived from cyanobacteria and eukaryotic algae.[3] These organisms use phycobiliproteins as accessory or antenna pigments for photosynthetic light collection. They absorb energy in portions of the visible spectrum that are poorly utilized by chlorophyll and, through fluorescence energy transfer, convey the energy to chlorophyll at the photosynthetic reaction center.

Phycobiliproteins are classified on the basis of their color into two large groups, the phycoerythrins (red) and the phycocyanins (blue).[3,4] Absorption maxima for phycoerythrins lie between 490 and 570 nm, while absorption maxima for phycocyanins are found between 610 and 665 nm. These large groups have been subdivided to reflect variation among the proteins in the exact location of the absorbance maximum and the specific shape of the absorbance spectrum. Originally, these subdivisions, identified by letter prefixes to the phycobiliprotein name (C-phycocyanin, abbreviated C-PC) indicated the taxa of the organisms from which the pigments were isolated. For example, R-phycoerythrin (R-PE) was first isolated from the Rhodophyta.

This product (B-PE) is found both in cyanobacteria and red algae. Visually, the intense pink color and orange fluorescence of B-PE are virtually indistinguishable from that of R-PE.

This product is used as an indicator protein in the quantitative assay for the oxygen-radical absorbing capacity of antioxidants (α-tocopherol, vitamin C, β-carotene, uric acid, and bilirubin) in serum.[5] Since this compound has a fluorescence quantum yield greater than 0.9, it provides a very sensitive measurement of the physical and chemical integrity of the antioxidants in this assay. This product can also be used as a fluorescent label for immunoassays, although R-phycoerythrin is more commonly used.[6]

This product is lyophilized from a solution containing phosphate buffer, pH 7.0, sucrose, dithioerythritol, and sodium azide.

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

This product is soluble in water (0.5 mg/ml). This product is also soluble in phosphate buffer, pH 7.0, at very low concentrations.

References

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2. White, J. C., and Stryer, L., Photostability studies of phycobiliprotein fluorescent labels. Analytical Biochem., **161(2)**, 442-452 (1987).
3. Glazer, A. N., Phycobilisomes: structures and dynamics. Ann. Rev. Microbiol., **36**, 173-198 (1982).
4. Phycobiliproteins, MacColl, R., and Guard-Friar, D., CRC Press (Boca Raton, FL: 1987).
5. Cao, G., et al., Oxygen-radical absorbance capacity assay for antioxidants. Free Radic. Biol. Med., **14(3)**, 303-311 (1993).
6. Kronick, M. N., The use of phycobiliproteins as fluorescent labels in immunoassay. J. Immunol. Methods, **92(1)**, 1-13 (1986).

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