
HECAMEG, Glucose based detergent

Product Description

Catalog number:	UP785480, 5x5g
Name:	Hecameg , a very mild Glucose based detergent effective for biological applications
Formula:	C ₁₅ H ₂₉ NO ₇

Applications

Extraction, purification, stabilization of proteins (recombinant or natural proteins)
Surfactant for chromatography, electrophoresis and ELISA analysis
Extraction of other biomolecules (DNA and RNA) from proteous samples
Study of protein structure, Reconstitution or crystallisation of membrane proteins, enzymes or antigens ;
Liposomes preparation
Sanitization of chromatography columns

Scientific and Technical Information

A high quality detergent

Hecameg is a synthetic, well defined molecule, providing consistent and reliable results. It is soluble in usual aqueous buffers at +4°C or room temperature (>100mg/ml) and stable for weeks at +4°C. The micellar concentration is CMC= 19.5mM which allow it's easy removal by dialysis. Molecular Weight is 335.4 g/mol.

An effective surfactant detergent that preserves proteins

Hecameg dissociates aggregated proteins, helps breaking biological membranes
Hecameg does not denature proteins, enzymes or antigens, because it is non charged
Hecameg does not interfere with their biological activity, as shown for more than hundred enzymes, antigens and receptors.

Extraction

Hecameg was used for extraction of proteins from Chromaffin granules of mammalian cells, at 4% (Hodel 1994), photosystem II core complex (Kouimtzoglou 1994), and Heparan Sulfate ProteoGlycan (Kiran 1994). 50mM Hecameg with EDTA, was found to gave the highest yields of active lectinic factor (involved in yeast flocculation) in comparison to other detergents (El-Behhari 1998).

Hecameg was used at several steps of the isolation of Bf6 cytochrome from tylakoids of Chlamydomonas alga (Pierre 1995): cells were suspended in saline buffer with 25mM Hecameg, and centrifuged. The supernatant was fractionnated by centrifugation in 10-30% w/w sucrose density gradient in presence of 20m M Hecameg and 0.1g/l egg phosphatidyl choline. Lastly, affinity chromatography was performed on hydroxylapatite, eluting with 20mM Hecameg plus 0.1g/l egg phosphatidyl choline.

Purification

Addition of 0.05% w/v **Hecameg** enhances recovery of material from hydroxyapatite and Q-Sepharose columns, and decreases elution volumes (Gerngross 1994).

Contact your local distributor

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Analysis

Hecameg produced the best diffracting crystals of Cytochrome bc1 complex (Lee 1995), in comparison with octyl-b-D-glucopyranoside, MEGA -9, n-octanoylsucrose and octyl-b-D-maltopyranoside. This was attributed to a better stability of proteins.

Hecameg was shown effective for reconstitution procedures in which detergents must be removed by dialysis, and for the lipid solubilization and uptake of vesicle contents at concentration well below the solubilizing range (BegonaRuiz 1994)

Other Information

For any question, please ask Uptima or your local distributor

Literature

- .Pierre Y. and al; Purification and Characterization of the cytochrom B6f Complex from *Chlamidomonas reinhardtii*; J.Biol. Chem. 1995, 270, 29342-29349
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- .El-Behhari and al, Comparative extraction procedure for a galactosidase-specific lectin involved in flocculation of *Kluyveromyces lactis* strains; Appl. Microbiol. Biotechnol. 1998; 49; 16-43
- .Gerngross and al; Overexpression and Purification of the Soluble Polyhydroxyalkanoate Synthetase (PHA synthetase) from *Alcaligenes eutrophus*: evidence for a Required Posttranslational Modification for Catalytic activity; Biochemistry 1994, 33, 9311-9320
- .Lee J.W. and al; Preliminary Cryocrystallographic study of the Mitochondrial Cytochrome bc1 Complex: Improved Crystallisation and Flash-cooling of a large Membrane Protein; Journal of Molecular Biology 1995, 252, 15-19
- .Begona Ruiz M.,and al; An assesment of the Biochemical Applications of the Non Ionic Surfcatat HECAMEG; Biochimica et Biophysica. Acta, 1994, 1193- 301-306
- .Kiran B. M., and al; Purification and Characterization of Adipocyte Heparan Sulfate Proteoglycans with affinity for Lipase; The journal of Biological Chelmistry 1994, v.269, n°38, 23838-23844

Other references

- .Plusquellec, D. et al. (1989) Anal. Biochem. 179, 145-53

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