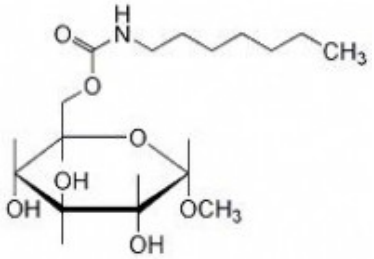
FT-785480

HECAMEG, Glucose based detergent

A very mild Glucose based detergent effective for biological applications

Product Description



Catalog number:: UP785480, 5g

Name: **Hecameg**
6-O-(N-Heptylcarbamoyl)-methyl-α-D-glucopyranoside
Methyl-6-O-(N-heptylcarbamoyl)-α-D-glucopyranoside

Formula: MW: 335.40 ; $C_{15}H_{29}NO_7$
CAS: [115457-83-5]
CMC: 19.5 mM

Storage: Room temperature (powder)
Following reconstitution, store in the refrigerator (4°C).
Stock solutions are stable for up to 3 months at 4°C.

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, crystallisation of membrane proteins, enzymes or antigens (Sauter 1999)
Liposomes preparation
Sanitization of chromatography columns

Scientific and Technical Information

A high quality detergent

Hecameg is a synthetic, well defined molecule, provided as a pure material (>98%) graded for biotech applications with 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.
Molecular Weight is 335.4 g/mol. The micellar concentration is CMC= 19.5mM (0.65%) which allow it's easy removal by dialysis. Aggregation number (H_2O_2) is ~ 92.
Stability is >2years as supplied. Stock solutions are stable for up to 3 months at +4°C.

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 floculation) 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 supernatent 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).

Analysis

Hecameg produced the best diffracting crystals of Cytochrome bc1 complex (Lee 1995), in comparison with octyl-β-D-glucopyranoside, MEGA-9, n-octanoylsucrose and octyl-β-D-maltopyranoside. This was attribuated 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)

Literature

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Other Information

For R&D use only.
Not regulated as a Hazardous Material (IATA/ADR)
Merck Index: 13, 4636

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