Hecameg®

Glucose-based detergent

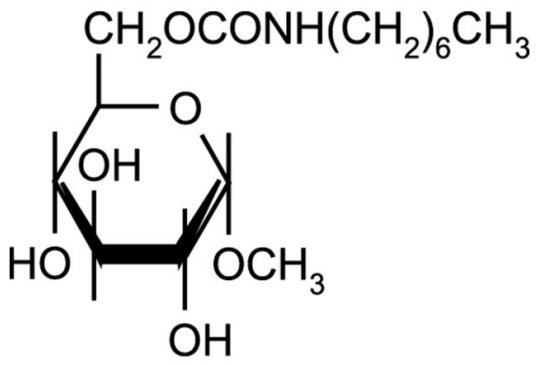
Non-ionic, glucose based very mild detergent for membrane protein purification.

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ALX-500-003-G005	5g

Manuals, SDS & CofA View Online »

CH2OCONH(CH2)6CH3
O
OH
HO
OCH3
OH

Handling & Storage

Use/Stability	As indicated on product label or CoA when stored as recommended.
Long Term Storage	+4°C
Shipping	Ambient Temperature

Regulatory Status

RUO - Research Use Only

Product Details

Alternative Name	6-O-(N-Heptylcarbamoyl)-methyl-α-D-glucopyranoside
Appearance	White to off-white crytalline solid.
Application Notes	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.
CAS	115457-83-5
Formula	$C_{15}H_{29}NO_7$
MW	335.4
Purity	≥98% (HPLC)
Solubility	Soluble in water (>100mg/ml at +4°C).

Hecameg is a synthetic, well defined high quality detergent, providing consistent and reliable results.
The critical micellar concentration is CMC= 19.5mM, which allow it's easy removal by dialysis.
An effective surfactant detergent that preserves proteins, dissociates aggregated proteins, helps breaking biological membranes without denaturing 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.
It 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 give the highest yields of active lectinic factor (involved in yeast flocculation) in comparison to other detergents (El-Behhari 1998).
It 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 fractionated by centrifugation in 10-30% w/w sucrose density gradient in presence of 20mM 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-b-D-glucopyranoside, MEGA -9, n-octanoylsucrose and octyl-b-D-maltopyranoside. This was attributed to a better stability of proteins.
It was shown to be 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 (Begona Ruiz 1994)

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