Accutase Cell Detachment Solution with EDTA and Phenol Red – 100 ml

Accutase is a ready-to-use, sterile-filtered cell detachment solution designed as a gentle alternative to **trypsin/EDTA** for dissociating adherent mammalian cells from standard tissue culture plasticware and adhesion-coated surfaces. It combines **proteolytic and collagenolytic enzyme activity** in a balanced salt solution to deliver effective yet controlled dissociation, preserving cell-surface proteins and supporting high post-passage viability and rapid reattachment.

The Accutase formulation is based on **Dulbecco's phosphate-buffered saline (DPBS)** with **EDTA** and **phenol red** as a visual pH indicator. The enzymes are of **non-mammalian and non-bacterial origin**, making Accutase particularly well suited to stem cell research, vaccine workflows, and any application where animal- or microbially-derived contaminants must be minimised. The solution auto-inhibits at 37 °C, so no neutralising reagent or serum-containing medium is required after detachment – cells can be transferred directly into fresh medium.

Key Features

- Ready-to-use 1x sterile-filtered liquid – no dilution or reconstitution required
- Combined proteolytic and collagenolytic enzyme activity for gentle dissociation
- Each batch standardised to a defined dissociation activity for lot-to-lot consistency
- Non-mammalian and non-bacterial enzyme origin
- Auto-inhibits at 37 °C – no neutralising solution needed
- Formulated in Dulbecco's PBS with EDTA
- Phenol red included as visual pH indicator
- pH 6.8 – 7.8

Typical Applications

Accutase gently dissociates a wide variety of adherent and sensitive cell types, including **human embryonic stem cells (hESCs)**, **human induced pluripotent stem cells (iPSCs)**, neural stem cells, primary neurons, and routinely cultured adherent lines such as HeLa, HEK 293, CHO, MDCK, Vero, NIH/3T3, BHK-21 and A549. Typical use cases include:

- Routine subculture and passaging of adherent mammalian cells
- Gentle single-cell dissociation of hESCs, iPSCs and other sensitive lines
- Sample preparation for flow cytometry and FACS analysis
- Analysis of cell-surface markers where epitope integrity matters
- Cell migration, proliferation and apoptosis assays
- Quiescence assays by serum starvation and oncogene transfection studies

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- Tumor cell and neural crest cell migration assays
- Production scale-up in bioreactor workflows

For routine work, apply approximately **10 ml of Accutase per 75 cm^2** of culture surface and incubate for **5–10 minutes at room temperature**. The optimal incubation time should be determined for each cell line and should not exceed one hour. Prior to addition, rinse the cell layer with a Ca^{2+}/Mg^{2+}-free salt solution such as **DPBS without calcium and magnesium** to remove residual serum and divalent cations.

Handling & Storage

Store the unopened bottle frozen at **-15 °C or below**. Thaw either at room temperature or overnight at **+2 °C to +8 °C**. **Do not thaw Accutase in a 37 °C water bath**, as elevated temperatures reduce enzyme activity. After thawing, the solution can be stored for up to **2 months at +2 °C to +8 °C**; do not store at room temperature. **Do not pre-warm** the reagent to 37 °C before application – add it directly to washed cells at room temperature. For long-term shelf life, single-use aliquoting is recommended to avoid repeated thaw cycles. Always work under aseptic conditions.

Quality

Manufactured under strict quality standards. Each batch of Accutase is sterile-filtered and tested for sterility, pH, appearance and dissociation activity to ensure consistent, reproducible performance from lot to lot.

Product Specifications

Specification	Detail
Product type	Cell detachment / dissociation reagent
Format	Sterile-filtered liquid, ready-to-use
Volume	100 ml
Working concentration	1x (ready-to-use)
Enzyme activity	Combined proteolytic and collagenolytic
Enzyme origin	Non-mammalian and non-bacterial
Buffer system	Dulbecco’s PBS with EDTA
pH indicator	Phenol red

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Specification	Detail
pH range	6.8 – 7.8
Appearance	Clear, pale red to orange solution
Storage temperature	-15 °C or below
Stability after thawing	Up to 2 months at +2 °C to +8 °C
Recommended use volume	~10 ml per 75 cm^2 culture surface
Typical incubation time	5 – 10 minutes at room temperature
Shipping conditions	Frozen on dry ice
Intended use	For research use and further manufacturing only

Formulation (Composition per Liter)

Component	Concentration (mg/L)
Inorganic Salts	
Sodium chloride (NaCl)	8000.00
Disodium hydrogen phosphate (Na_2HPO_4)	1150.00
Potassium chloride (KCl)	200.00
Potassium dihydrogen phosphate (KH_2PO_4)	200.00
Other Components	
EDTA · 4Na (tetrasodium EDTA)	220.00
Phenol red	3.00
Proprietary enzyme blend (proteolytic and collagenolytic activity)	1x

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