

UltraSALINE A Application Guide

UltraSALINE A is a HEPES-buffered saline used in trypsinization protocols of reduced-serum and serum-free systems and preparation of stock solutions. It is referred to in the literature as Solution A, Solution I or HEPES-buffered saline.^{1,2,3,4}

The presence of HEPES buffer in the formulation allows the pH to be established within narrow limits depending on the application. Usually, the pH of UltraSALINE A is slightly alkaline (approximately 7.55, which is also HEPES pK_a value). During the washing steps preceding trypsinization, a slightly alkaline pH facilitates neutralization of acidic pH associated with confluent monolayer cultures. Furthermore, trypsinization is improved in the presence of higher pH since trypsin's optimum activity is at pH 7.7.⁵

UltraSALINE A is especially recommended with the cold trypsinization procedure designed to minimize cell damage and trypsin internalization by pinocytosis.^{1,6} Cold trypsinization should be used whenever possible, especially in reduced-serum and serum-free systems to ensure maximum cell viability. The presence of glucose in the UltraSALINE A formulation helps improve viability of recently trypsinized cells kept in suspension.

UltraSALINE A can also be used to prepare stock solutions of medium supplements such as growth factors and hormones. The pH of the solution can be shifted from alkaline to acidic as required to solubilize components.

Storage

2°C to 8°C, protected from light to avoid the photo - degradation of HEPES.

References

1. R.G. Ham and W.L. McKeehan. Media and Growth Requirements. *Methods in Enzymology* 58:44-93. 1979.
2. S.T. Boyce and R.G. Ham. Calcium-Regulated Differentiation of Normal Human Epidermal Keratinocytes in Chemically-Defined Clonal Culture and Serum-free Serial Culture. *J. Invest. Dermatol.* 81:33s-40s. 1983.
3. D. Peehl. Serial Culture of Adult Prostatic Epithelial Cells. *J. Tissue Culture Methods* 9:53-60. 1985.
4. H. Hoshi and W.L. McKeehan. Isolation, Growth Requirements, Cloning, Prostaglandin Production and Life-Span of Human Adult Endothelial Cells in Low Serum Culture Medium. *In Vitro Cellular and Develop. Biol.* 22:51-56. 1986.
5. A.L. Lehninger. *Enzymes*. In: *Principles of Biochemistry* (S. Anderson and J. Fox, eds.). Worth Publishers, Inc., New York pp. 207-247. 1982.
6. W.L. McKeehan. The Effect of Temperature during Trypsin Treatment on Viability and Multiplication Potential of Single Normal Human and Chicken Fibroblasts. *Cell Biol. Int. Rep.* 1:335. 1977.

Ordering Information

Cat. No.	Description	Size
12-747F	UltraSALINE A	500ml

THESE PRODUCTS ARE FOR RESEARCH USE ONLY. Not approved for human or veterinary use, for application to humans or animals, or for use in clinical or *in vitro* procedures.

All trademarks herein are marks of Lonza Group or its subsidiaries.