Product Profile

Product Name:	*Dulbecco's Phosphate Buffered Saline(DPBS)*
Product Catalog Number	*02-020-1*
Concentration:	1X
Unit Size Availability:	(A)500ml;(B)100ml
Formulation:	Clear, Colorless Solution
Optimal Storage Conditions:	2-8°C
Stability: (Under Specified Handling & Storage Conditions)	Please Refer To Product Label

Important Note! Please read the *MSDS* and *Product Profile* carefully in their entirety ***before*** using this material for possible safety precautions and potential hazards.

Product Description:
Dulbecco's Phosphate Buffered Saline (DPBS) is intended to provide a buffer system for maintaining cell culture media in the physiological range of 7.2-7.6. It's utility in maintaining mammalian cells when a balanced, chemically-defined salt solution provides the appropriate milieu to sustain the physiological and structural integrity (i.e. tonicity/viability) of cells ***in vitro*** for a limited period of time. DPBS may be used as a Calcium (Ca^{2+}) and Magnesium(Mg^{2+})—Free solution for use in Trypsin solutions or it is available with Calcium and Magnesium salts where required. It generally serves as a general use isotonic saline solution or buffer for washing cells and tissues (e.g. in chromatographic procedures) where incubation is not necessary. DPBS without Calcium and Magnesium is used in the dissociation process to wash and re-suspend cells when the presence of Calcium and Magnesium may inhibit Trypsin activity.

Balanced Salts are generally utilized to maintain cells for the short term in a viable condition rather than to promote their growth while the cells are manipulated outside of their regular growth environment. During these intervals, the cells maintenance requirements are such that osmotic balance and physiological pH are at the forefront as such isotonic solutions like DPBS without Calcium and Magnesium protects the cells from acute fluctuations, likely encountered, during laboratory manipulations.

The current role of Balanced Salt Solutions in Cell Culture is multi-faceted and can be divided into four-fold principal functions:

- Provides cells with water and certain bulk inorganic ions essential for normal cell metabolism
- Serves not only as an irrigating and transporting fluid, but also as a diluent (i.e. especially in cell enumerations) while maintaining osmoregulation, the optimal and constant balance of osmotic pressure gradients between the intracellular and extracellular compartments.
- Provides a Buffering System to support the medium within the physiological range of 7.2-7.6
- When combined with a carbohydrate(CHO) such as Glucose($C_6H_{12}O_6$),it provides the principal energy source for Cellular Metabolic Processes

Biological Industries' wide array of salt solutions are commonly used and available and hence utilized according to application and technique. In order to optimize success, the eventual ***in vitro*** cell culture conditions must ultimately mimic the ***in vivo*** conditions for adequate cell attachment, membrane potential, coenzyme factors, osmotic pressure, and physiological pH. The final cell culture medium determined by the researcher must provide the proper milieu whose primary responsibility lies with these salt solutions which vary in terms of concentration and complexity.

Some Predominant Characteristics of DPBS include:

- Liquid Formulation(1X)
- With Calcium and Magnesium Chloride
- Sterile-Filtered(0.1µ)
- Cell-Culture and Endotoxin-Tested

Instructions/Procedure:
The product should be stored at refrigeration temperature (2-8°C). The product should not be left in the light for prolonged periods as it is light-sensitive. When stored in the dark under ideal conditions, the product is stable until the expiry date.

1) Take a bottle of DPBS, from the proper storage conditions at Refrigeration Temperature (2-8°C) and read the label.
2) Ensure that the cap of the bottle is tight.
3) Gently swirl the solution in the bottle.
4) Wipe the outside of the bottle with a disinfectant solution such as 70% ethanol.
5) Using aseptic/sterile technique under a laminar-flow culture hood, work according to established protocols.

Quality Control

Test	Specification
Appearance:	Clear Solution
Endotoxins:	Test and Record
Osmolality:	275-290 mOsm/Kg
pH:	7.25-7.45
Sterility:	Sterile

Auxiliary Products

Product Name	Catalog Number	Storage Temperature
Earle's Balance Salt Solution 10X Conc., without Sodium Bicarbonate	02-010-5	Room Temperature (15-30°)
Earle's Balance Salt Solution without Phenol Red	02-011-1	Room Temperature (15-30°)
Earle's Balance Salt Solution without Phenol Red, without Sodium Bicarbonate	02-011-5	Room Temperature (15-30°)
Dulbecco's Phosphate Buffered Saline(DPBS),without Calcium and Magnesium	02-023-1	Room Temperature (15-30°)
Dulbecco's Phosphate Buffered Saline(DPBS), 10X Conc., without Calcium and Magnesium	02-023-5	Room Temperature (15-30°)
L-Glutamine Solution 29.2mg/ml in Saline	03-020-1	-20°C
L-Alanyl-L-Glutamine Solution(A Dipeptide Substitute)	03-022-1	-20°C
Sterile Culture-Grade Water	03-055-1	Room Temperature (15-30°)
Fetal Bovine Serum	04-001-1	-20°C
Fetal Bovine Serum(Qualified for Human Embryonic Stem Cells)	04-002-1	-20°C
Adult Bovine Serum	04-003-1	-20°C
Serum-Free Cell Freezing Medium	05-065-1	2-8°C
Note: For a list of Antibiotics, Serum, other Reagents and Supplements, please refer to our Product Catalog/Product Profiles/Product Guides and Internet Site.		

References:

1) Current Edition Merck Index
2) Biological Industries(BI) Specifications
3) Darling, D.C. and Morgan, S.J. Animal Cells: Culture and Media, New York: John Wiley & Sons,1994
4) Dulbecco, R. and Vogt, M. *Journal of Experimental Medicine*, 99:167,1954
5) Lackie, J. M. The Dictionary of Cell & Molecular Biology, Academic Press: London, 2007