

Product Information

Dulbecco's Phosphate Buffered Saline

The use of a balanced salt solution (BSS) in tissue culture is generally attributed to early workers in the field. In 1885, Sydney Ringer developed a solution of inorganic salts designed to maintain contractility of mammalian heart tissue. A less specific salt solution was designed by Tyrode for use in work with mammalian cells in general. Tyrode's salt solution became the accepted fluid for diluting protein components of media of natural origin. Since that time, many other balanced salt solutions have been developed for use in tissue culture.

The current role of a balanced salt solution in cell culture is multifaceted and can be divided into four principal functions:

- serves as an irrigating, transporting and diluting fluid while maintaining intra- and extracellular osmotic balance;
- provides cells with water and certain bulk inorganic ions essential for normal cell metabolism;
- combined with a carbohydrate, such as glucose, provides the principal energy source for cell metabolism;
- provides a buffering system to maintain the medium within the physiological pH range.

	D8537	D8662	D5773	D4031	D5652	D1283
	[1×	[1×	[powder]	[1×	[powder]	[10×
COMPONENT	g/L	g/L	g/L	g/L	g/L	g/L
Inorganic salts						
CaCl ₂ • 2H ₂ O	—	0.133	—	0.133	—	1.33
MgCl ₂ • 6H ₂ O	—	0.1	0.1	0.1	—	1.0
KCl	0.2	0.2	0.2	0.2	0.2	2.0
KH ₂ PO ₄	0.2	0.2	0.2	0.2	0.2	2.0
NaCl	8.0	8.0	8.0	8.0	8.0	80.0
Na ₂ HPO ₄ (anhydrous)	1.15	1.15	1.15	1.15	1.15	11.5
Other						
D-Glucose	—	—	—	1.0	—	—
Kanamycin Sulfate	—	—	—	0.1	—	—
Penicillin G (sulfate)	—	—	—	—	—	—
Pyruvic Acid • Na	—	—	—	0.036	—	—
Streptomycin Sulfate	—	—	—	0.05	—	—

	D1408	56064C	59321C	59300C	59331C
	[10×	[powder]	[1×	[1×	[10×
COMPONENT	g/L	g/L	g/L	g/L	g/L
Inorganic salts					
CaCl ₂ • 2H ₂ O	—	—	—	0.133	—
MgCl ₂ • 6H ₂ O	—	—	—	0.1	—
KCl	2.0	0.2	0.2	0.2	2.0
KH ₂ PO ₄	2.0	0.2	0.2	0.2	2.0
NaCl	80.0	8.0	8.0	8.0	80.0
Na ₂ HPO ₄ (anhydrous)	11.5	1.15	2.1716	1.15	21.716

Reference

1. Dulbecco, R., and Vogt, M., Plaque Formation and Isolation of Pure Lines with Poliomyelitis Viruses. J. Exp. Med., **99**, 167-182 (1954).

JG,PD,JF,MAM 04/14-2