Basal Salt Mixtures

ProductInformation

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 (7.2-7.6).

COMPONENT	A 3551 [1X] g/L	G 9779 [1X] g/L	K 4002 g/L	K 3753 g/L	P 2917 [1X] g/L
INORGANIC SALTS					
$CaCl_2$	—	0.2251	—	—	—
$MgCl_2 \cdot 6H_2O$	—	0.21	0.1	—	—
$MgSO_4$ (anhyd)	—	0.0342	—	0.141	—
KCl	—	0.37	0.34	0.35	0.4
KH_2PO_4 (anhyd)	—	0.03	—	0.16	—
$NaHCO_3$	—	2.27	—	—	0.35
NaCl	4.2	7.0	7.0	6.9	8.0
Na_2HPO_4 (anhyd)	—	0.1196	0.1	—	—
NaH_2PO_4 (anhyd)	—	—	0.18	—	—
OTHER					
Citric Acid•3Na•$2H_2O$	8.0	—	—	—	—
Citric Acid•H_2O	0.55	—	—	—	—
D-Glucose	20.5	1.0	1.8	2.0	1.0
Phenol Red (sodium)	—	—	—	—	0.005
ADD					
$NaHCO_3$	—	—	1.26	2.1	—
Grams of powder required to prepare 1 L	N/A	N/A	9.5	9.6	N/A

REFERENCES

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Basal Salt Mixtures continued

COMPONENT	T 1788 [1X] g/L	T 2145 g/L	T 2397 [1X] g/L
INORGANIC SALTS			
$CaCl_2 \cdot 2H_2O$	0.24	0.265	0.265
$MgCl_2 \cdot 6H_2O$	0.1	0.214	0.214
KCl	0.2	0.2	0.2
$NaHCO_3$	—	—	1.0
NaCl	8.0	8.0	8.0
NaH_2PO_4 (anhyd)	—	0.05	0.05
OTHER			
D-Glucose	1.0	1.0	1.0
Polyvinylpyrrolidone (avg. mol. wt. 40,000)	4.0	—	—
ADD			
$NaHCO_3$	—	1.0	—
Grams of powder required to prepare 1 L	N/A	9.7	N/A

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