Product sheet

RPMI 1640, w: 4.5 g/L Glucose, w: 2 mM L-Glutamine, w: 10 mM HEPES, w: 1 mM Sodium pyruvate, w: 1.5 g/L NaHCO3 | 820702a

RPMI 1640 Medium, also known as RPMI medium, is a highly versatile cell culture medium widely utilized in biological research to cultivate various mammalian cells. Developed by George E. Moore, Robert E. Gerner, and H. Addison Franklin in 1966 at the renowned Roswell Park Comprehensive Cancer Center, this medium derived its name from its origin at the Roswell Park Memorial Institute (RPMI).

Initially designed to support the growth of human leukemic cells in both suspension and monolayer cultures, RPMI 1640 Medium has evolved through modifications by researchers and commercial suppliers to become suitable for a diverse range of mammalian cells. It is exceptionally compatible with cell lines such as HeLa, Jurkat, MCF-7, PC12, PBMC, astrocytes, and carcinomas.

RPMI 1640 Medium stands apart from other cell culture media due to its unique composition. It contains a substantial amount of phosphate, amino acids, and vitamins. Notably, it encompasses biotin, vitamin B12, and PABA, absent in Eagle's Minimal Essential Medium or Dulbecco's Modified Eagle Medium. Moreover, RPMI 1640 Medium exhibits significantly elevated concentrations of vitamins inositol and choline. However, it does not contain proteins, lipids, or growth factors. Consequently, supplementation with 10% Fetal Bovine Serum (FBS) is commonly required to provide optimal conditions for cell growth.

The buffering system of RPMI 1640 Medium relies on sodium bicarbonate (2.0 g/L) and necessitates a 5-10% CO2 environment to maintain a physiologically appropriate pH. The inclusion of the reducing agent glutathione further distinguishes this medium from others.

This RPMI 1640 medium contains 4.5 grams per liter of glucose.

Quality control

- pH = 7.2 +/- 0.02 at 20-25°C.
- Each lot has been tested for sterility and absence of mycoplasma and bacteria.

Maintenance

- Keep refrigerated at +2°C to +8°C in the dark. Freezing and warming up to +37° C minimize the quality of the product.
- Do not heat the medium to more than 37° C or use uncontrollable sources of heat (e.g., microwave appliances).
- If only a part of the medium is to be used, remove this amount from the bottle and warm it up at room temperature.
- Shelf life for any medium except for the basic medium is 8 weeks from the date of manufacture.

Composition

	Components	mg/L
Inorganic Salts	Calcium nitrate x 4H2O	100,00
	Magnesium sulfate anhydrous	48,83
	Potassium chloride	400,00
	Sodium chloride	5450,00
	di-Sodium hydrogen phosphate	800,49
Other Components	D(+)-Glucose anhydrous	4500,00
	Glutathione (red.)	1,00

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	HEPES	2383,00
	Phenol red	5,00
	Sodium pyruvate	110,00
Amino Acids	L-Arginine x HCl	241,86
	L-Asparagine x H2O	56,82
	L-Aspartic acid	20,00
	L-Cystine x 2HCl	65,19
	L-Glutamine	300,00
	L-Glutamic acid	20,00
	Glycine	10,00
	L-Histidine x HCl x H2O	20,27
	L-Hydroxyproline	20,00
	L-Isoleucine	50,00
	L-Leucine	50,00
	L-Lysine x HCl	40,00
	L-Methionine	15,00
	L-Phenylalanine	15,00
	L-Proline	20,00
	L-Serine	30,00
	L-Threonine	20,00

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	L-Tryptophan	5,00
	L-Tyrosine x 2Na	28,83
	L-Valine	20,00
Vitamins	p-Aminobenzoic acid	1,00
	D-(+)-Biotin	0,20
	D-Calcium pantothenate	0,25
	Choline chloride	3,00
	Folic acid	1,00
	myo-Inositol	35,00
	Nicotinamide	1,00
	Pyridoxine x HCl	1,00
	Riboflavin	0,20
	Thiamine x HCl	1,00
	Vitamin B12	0,01
	NaHCO3	1500,00