Product sheet

RPMI 1640, w: 2.0 mM stable Glutamine, w: 2.0 g/L NaHCO 3 | 820700a

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 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.

Quality Control

- Sterile-filtered

Storage and Shelf Life

- Store at +2°C to +8°C, protected from light.
- Once opened, store at 4°C and use within 6–8 weeks.

Shipping Conditions

- Ambient temperature

Maintenance

- Keep refrigerated at +2°C to +8°C in the dark. Avoid freezing and frequent warming to +37°C, as it reduces product quality.
- Do not heat the medium beyond 37°C or use uncontrolled heat sources such as microwave appliances.
- If only part of the medium is to be used, remove the required amount and warm it to room temperature before use.

Composition

Category	Components	Concentration (mg/L)
Amino Acids	Glycine	10.00
	L-Alanyl-L-Glutamine	434.40
	L-Arginine	200.00
	L-Asparagine H_2O	56.82
	L-Aspartic Acid	20.00

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	L-Cystine 2HCl	65.20
	L-Glutamic Acid	20.00
	L-Histidine HCl H_2O	20.27
	L-Hydroxy-L-Proline	20.00
	L-Isoleucine	50.00
	L-Leucine	50.00
	L-Lysine HCl	40.00
	L-Methionine	15.00
	L-Phenylalanine	15.00
	L-Proline	20.00
	L-Serine	30.00
	L-Threonine	20.00
	L-Tryptophan	5.00
	L-Tyrosine 2Na $2H_2O$	28.83
	L-Valine	20.00
Vitamins	p-Amino Benzoic Acid	1.00
	D-Biotin	0.20
	Choline Chloride	3.00
	D-Calcium Pantothenate	0.25
	Folic Acid	1.00
	myo-Inositol	35.00

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	Nicotinamide	1.00
	Pyridoxine HCl	1.00
	Riboflavin	0.20
	Thiamine HCl	1.00
	Vitamin B_{12}	0.005
Inorganic Salts	$Ca(NO_3)_2$ $4H_2O$	100.00
	KCl	400.00
	$MgSO_4$ $7H_2O$	100.00
	NaCl	6000.00
	$NaHCO_3$	2000.00
	Na_2HPO_4	800.00
Other Components	D-Glucose	2000.00
	L-Glutathione Reduced	1.00
	Phenol Red Sodium Salt	5.30