

Product Profile

Product Name:	RPMI 1640 without L-Glutamine
Product Catalog Number	01-104-1
Unit Size Availability:	(A)500ml :(B)100ml
Concentration:	1X
Formulation:	Red-Colored Solution
Specified Storage Conditions:	2-8°C
Stability: (Under Specified Handling & Storage)	Please Refer to the 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:

RPMI Medium 1640 without L-Glutamine has been specifically developed for the long-term culture of blood cells, the culture of normal and abnormal human leukocytes (e.g. neoplastic WBC's) and is now used as a general medium (with serum) for hybridoma cultures. Roswell Park Memorial Institute (RPMI) 1640, when properly supplemented, has demonstrated wide applicability for supporting the growth of many types of cells in culture, including human lymphocytes.

Most common types of media consists of an isotonic, buffered basal nutrient enriched environment which provides an energy source, inorganic salts, vitamins, amino acids as well as additional constituents(e.g. supplements) according to the demands of a particular cell line. This relatively more complex medium formulation provides the optimal cell-culture environment in which *in vitro* culture conditions mimic those of the *in vivo* environment including basic nutritional requirements, osmotic pressure, physiological pH, temperature among other considerations. At a minimum, it consists of the foundation medium components that are all part and parcel of a pre-tested complete media to assist the cells in meeting their metabolic demands.

RPMI Medium 1640 contains no growth-promoting factors or antimicrobials. The type of medium recommended usually is dependent upon the type and character of the cells in culture. Supplementation is the process in which specific additions or supplements (e.g. growth factors, serum, fatty-acids, buffers, hormones) complement a typical basal or balanced salt solution medium or more complex media such as RPMI 1640.

These more complex media not only meet the minimum requirements for cell growth and proliferation but also are part and parcel of a much wider array of factors culminating in a final medium that segues with the essential cell-niche requirements demanded for optimal results.

For example the addition of L-Glutamine, a precursor of glutamate, is one of the most readily available sources of energy for many rapidly dividing cell-types for use *in vitro* and is a key component and essential amino acid that is required in many cell-culture media formulations and in virtually all mammalian cells in culture. Also adding Sodium pyruvate serves as an additional an easily accessible carbohydrate energy source for cells in culture. Along with D-glucose, these balanced energy sources serve as carbon skeletons for cell anabolic processes in addition to nucleic acid metabolism and protein production while limiting the potential cumulative build-up effects of toxic levels of ammonia.

Serum and Serum Products

Serum or serum-like replacements are necessary for the growth and proliferation of cells. Serum is largely undefined, but it supplies a mixture of all types of proteins, structural, carrier and functional proteins including essential growth factors, hormones, minerals, trace elements and even inhibitory substances. Serum supplementation is a crucial planning step which plays a vital role in the success of your final medium. **Biological Industries'** Pre-Screened and Pre-Tested Serum undergoes the most stringent and rigorous Quality Control/Assurance standards and protocols testing all raw materials and finished products in order to meet the demands of international markets and ensure high quality and consistency. All our serum products meet approved compliance validation and specifications prior to use and or release of the final product to the end-user. Our Fetal Bovine Serum (FBS) undergoes a methodical and comprehensive battery of Physico-Chemical, Microbiological and Biological Performance Testing Procedures. Each batch is traceable, well-documented from source of origin through the thorough and systematic Quality Control process. All documentation and certification are available upon request.

RPMI Medium 1640 contains numerous important basic constituents in a ready-to-use formulation, after proper dilution, that includes a typical and wide variety of elements, among others:

- ◆ Amino Acids
- ◆ Glucose
- ◆ Inorganic Salts
- ◆ Phenol Red
- ◆ Vitamins
- ◆ Trace Elements

It does not contain L-Glutamine, or Antibiotics.

Some Predominant Characteristics of RPMI Medium 1640 includes:

- § Liquid Formulation
- § With Sodium Bicarbonate(NaHCO₃)
- § With Phenol Red(C₁₉H₁₃NaO₅S) as a pH indicator
- § Promotes Cell Performance and Productivity
- § More Uniform & Consistent Media Performance
- § Sterile-Filtered(0.1µ), Cell-Culture-Tested

Storage, Handling, Stability Precautions and Disclaimer:

For *in vitro* diagnostic use only.

RPMI Medium 1640 is stable when stored under defined conditions at 2-8°C. The product is light-sensitive and therefore should not be left in the light. When stored in the dark under ideal conditions, the product is stable until the expiry date.

As with any other liquid media formulations, deterioration of liquid media may be recognized by any of the following characteristics, among others including: (a). color change, (b). presence of clumping/flocculent debris/ granulation/ particulates\ precipitates or sediments (c). insolubility,(d). and/or decrease in expected performance parameters. Any material described above should not be used and therefore discarded.

Instructions/Procedure:

- 1) Take a bottle from the defined storage conditions at 2-8°C and read the label.
- 2) Wipe the outside of the bottle with a disinfectant solution such as 70% ethanol.
- 3) Using aseptic/sterile technique under a laminar-flow culture hood, work according to established protocols.
- 4) Add 2mM of L-Glutamine 200mM Solution. L-Glutamine, a precursor of glutamate, is one of the most readily available sources of energy for many rapidly dividing cell-types for use *in vitro* and is a key component and essential amino acid that is required in many cell-culture media formulations and in virtually all mammalian cells in culture.
- 5) Antibiotics may be added if desired.

Quality Control

Test	Specification
Cell-Culture	Test and Record
Cell Line	Vero
Endotoxins	Test and Record
Osmolality	269-296 mOsm/kg
pH	7.0-7.5
Sterility	Sterile

Auxiliary Products

Product Name	Catalog Number	Storage Temperature
L-Glutamine Solution 29.2mg/ml in Saline	03-020-1	-20°C
Alanyl-Glutamine Solution(A Dipeptide Substitute)	03-022-1	-20°C
Penicillin-Streptomycin Solution	03-031-1	-20°C
Sodium Bicarbonate (5%)	03-040-1	15-30°C
Sodium Bicarbonate (7.5%)	03-041-1	15-30°C
Sodium Pyruvate	03-042-1	-20°C
Water, Cell Culture Grade	03-055-1	15-30°C
Note: For a list of other Antibiotics or Serum, please refer to our Product Catalog/Product Profiles/Product Guides and Internet Site.		

References:

- 1) Biological Industries (BI) Specifications
- 2) Darling, D.C. and Morgan S.J. Animal Cells: Culture and Media, John Wiley & Sons, New York, 1994
- 3) Lackie, J. M. The Dictionary of Cell & Molecular Biology, Academic Press: London, 2007