

### Product Profile

Product Name:	Leibovitz L-15 ,with L-Glutamine
Product Catalog Number	01-115-1
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:

*Leibovitz L-15 Medium with L-Glutamine* has been generally developed to support the growth and development of established cell lines in a CO<sub>2</sub> – free atmosphere requiring sodium bicarbonate supplementation. However, after appropriate supplementation, this complex media formulation relative to other media types such as Balanced Salt Solutions or Basal Media Formulations, can specifically support established cell lines such as HEP-2 cells (i.e. used for identification of antinuclear auto-antibodies or ANA) and LLC-MK<sub>2</sub> also known as Lipid Metabolism of Monkey Kidney cells. It is also utilized for the culture of primary explants of not only embryonic but also adult human tissue. *Leibovitz L-15 Medium* has also been successfully utilized for the cultivation of viruses.

Often the choice of a general medium is empirical. 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.

*Leibovitz L-15 Medium with L-Glutamine* 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) compliment a typical basal or balanced salt solution medium or more complex media such as *Leibovitz L-15 Medium*, Iscove's or 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. Sodium pyruvate serves as an additional an easily accessible carbohydrate energy source for cells in culture. Along with Galactose (substituted for 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. *Leibovitz L-15 Medium with L-Glutamine* is to be used in a Carbon Dioxide-Free Atmosphere.

#### 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.

*Leibovitz L-15 Medium, with L-Glutamine* contains numerous important basic constituents in a ready-to-use formulation, that includes a typical and wide variety of elements, among others:

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

Some Predominant Characteristics of *Leibovitz L-15 Medium, with L-Glutamine* includes:

- § Liquid Formulation
- § Without Sodium Bicarbonate(NaHCO<sub>3</sub>)
- § With Phenol Red(C<sub>19</sub>H<sub>13</sub>NaO<sub>5</sub>S) 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.

*Leibovitz L-15 Medium, with L-Glutamine* 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) Antibiotics may be added if desired.

#### Quality Control

Test	Specification
Appearance	Clear,Red-Colored Liquid
Cell-Culture	Test and Record
Cell Line	Hep-2
Endotoxins	Test and Record
Osmolality	310-345 mOsm/kg
pH	7.3-7.6
Sterility	Sterile

#### Auxiliary Products

Product Name	Catalog Number	Storage Temperature
Penicillin-Streptomycin Solution	03-031-1	-20°C
Sodium Bicarbonate (7.5%)	03-040-1	15-30°C
Sodium Bicarbonate (5.0%)	03-041-1	15-30°C
Water, Cell Culture Grade	03-055-1	15-30°C
<u>Note:</u> For a list of other Antibiotics or Serum, please refer to our Product Catalog/Product Profiles/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