



Product Profile

Product Name:	Schneider's <i>Drosophila</i> Medium, with L-Glutamine
Product Catalog Number	01-150-1
Unit Size Availability:	(A)500ml;(B)100ml
Formulation:	Yellow-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:

Many types of insect culture media have been formulated to imitate or mimic the diverse biochemical properties characteristic of insect hemolymph for the study of different biological processes. It should be obvious that variegated and diverse formulas have been developed or rather designed to endeavor to meet the individual, unique niche requirements but nevertheless, most often differ both quantitatively and qualitatively in terms of constituents.

The application of insect cell culture for heterologous protein expression has progressively increased over the last several decades. An important factor underscoring this popularity of insect cell expression is the innate ability of insect cells to produce relatively large quantities of post-translationally modified eukaryotic proteins in a relatively short period of time. Aside from recombinant protein expression, *Drosophila* spp. cells have also been used in cellular and developmental biology, molecular biology, endocrinology, genetics and insect physiology among other disciplines.

Schneider's Drosophila Medium, with L-Glutamine is a medium designed and optimized for the supporting the rapid growth of both primary and established cultures of cells derived from *Drosophila melanogaster* known colloquially as the fruit, banana, pomace, vinegar and wine fly to name a few. This medium has also been utilized for the growth and maintenance of cell lines originally derived by Schneider from the embryos of *Drosophila* spp. in addition to cell culture of other Dipteran species.

Drosophila melanogaster is probably the most familiar and well-known insect in the world of genetic research and is a key model that has greatly contributed to the advance of genetics, behavior, aging, developmental biology and evolution. It is, also outside of academic circles, one of the most unappreciative and unaccredited key players in some of the twentieth century's greatest biological discoveries.

The billions of diminutive and minute fruit-flies that were bred and literally, the hundreds of thousands of published scientific papers illustrating practically every aspect of their unique lives is a testament to their enduring and widespread legacy. That such a small insect has offered the scientific community an enormous window into our biological world and helped define the boundaries of not only our present biological knowledge, but also offers us a glimpse of what awaits us in the uncharted recesses of our imagination. With its four pair of chromosomes and a new generation every twelve days, it is no wonder and a fact that most every discovery in the field of Modern Genetics from Gene Therapy to Cloning to the Human Genome Project is built on the foundations of early 20th Century fruit-fly research. Literally, with a wild fruit-fly population, the process of evolution is fixed in a matter of months not eons in a space-time continuum.

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. When supplemented with Fetal Bovine Serum (FBS), *Schneider's Drosophila Medium with L-Glutamine* has been found to support the growth and proliferation of both primary and established *Drosophila melanogaster* cells in culture. 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.

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 may also serve as an additional an easily accessible carbohydrate energy source for cells in culture. 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.

The selection of a specific and complex nutrient-enriched medium such as *Schneider's Drosophila Medium with L-Glutamine* typically represents the requirements for promoting cell growth and maintenance, is multi-faceted and is based as well upon several major fundamental characteristics:

- ◆ Cell Type
- ◆ Type of Cell Culture Environment (e.g., Clonal, Monolayer or Suspension)
- ◆ Uniquely Defined Individual Niche Requirements

Schneider's Drosophila Medium with L-Glutamine also contains constituents that include a typical and wide variety of, among others:

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

Some Predominant Characteristics of *Schneider's Drosophila Medium with L-Glutamine* include:

- § Ready-To-Use-Formulation
- § With L-Glutamine
- § With Sodium Bicarbonate
- § More Precise Evaluation of Cell Function
- § Improves Cell Adaptation Time
- § Promotes Cell Performance and Productivity
- § More Uniform & Consistent Media Performance
- § Sterile-Filtered(0.1µ)

Storage & Handling Precautions and Disclaimer:

For *in vitro* diagnostic use only.

Schneider's Drosophila Medium with L-Glutamine should be stored under defined conditions between 2-8°C. The product should not be left in the light for prolonged periods as it is light-sensitive. When stored in the dark under ideal conditions, the product is stable until the expiry date on the label.

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 proper storage conditions between 2-8°C and read the label.
- 2) Allow to warm to room temperature prior to use.
- 3) Ensure that the cap of the bottle is tight.
- 4) Gently swirl the solution in the bottle to ensure homogeneity.
- 5) Wipe the outside of the bottle with a disinfectant solution such as 70% ethanol.
- 6) Using aseptic/sterile technique under a laminar-flow culture hood, work according to established protocols.

Quality Control

Test	Specification
Appearance:	Clear Solution
Osmolality:	270-298 mOsm/kg
pH:	6.2-6.8
Sterility:	Sterile

Auxiliary Products

Product Name	Catalog Number	Storage Temperature
Alanyl-Glutamine Solution(A Dipeptide Substitute)	03-022-1	-20°C
Penicillin-Streptomycin Solution	03-031-1	-20°C
Sodium Pyruvate Solution	03-042-1	-20°C
Note: For a list of Serum, or other Antibiotics, 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) Brookes, Martin. *Fly: The Unsung Hero of 20th-Century Science*, New York: Harper Collins
- 4) Lackie, J. M. *The Dictionary of Cell & Molecular Biology*, Academic Press: London, 2007