



Biological Industries Israel
Beit Haemek Ltd.

Version: 1.1
Date: 11/2009
Pages: 1 of 3

Product Profile

Product Name:	BIO-MPM-1, Multi-Purpose SFM without Glutamine
Product Catalog Number	05-060-1
Concentration:	1X
Unit Size Availability:	(A) 500ml; (B) 100ml
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

BIO-MPM-1 is a multi-purpose, ready-to-use serum-free medium designed for anchorage-dependent (adherent) cells in Monolayer Culture after the addition of two (2)mM L-Glutamine. This specific formulation contains no albumin, which has been proven to be a non-essential protein component for cell growth and, in some cases, even inhibits efficient adhesion of cells. The total protein (TP) concentration of *BIO-MPM-1 SFM for Adherent Cells* is less than 30mg/liter. It may be also necessary when utilizing *BIO-MPM-1*, to include an attachment factor, such as Fibronectin due to the fact that many (but not all) cases require its presence for successful adaptation.

Monolayer cultures are essential for anchorage-dependent cells and do not grow in suspension cultures or semi-solid soft agar. Therefore, they need only to be divided and can simply be "passaged" or fed by removing the old medium and replacing it with fresh.

The successful transition from cell culture work utilizing serum-containing media to serum-free media often requires the utilization of techniques specifically developed for this purpose. Some of these techniques include but are not limited to:

- ◆ Special Techniques for Trypsinization
- ◆ The Neutralization of Trypsin
- ◆ The Cryopreservation of Cells
- ◆ The Effective Serum-Free Growth Medium

Careful attention to detailed procedures outlined in the *Product Guide* entitled "Serum-Free Medium" (i.e. Available upon Request) is essential in order to guarantee the successful adaptation of *BIO-MPM-1* to your cell culture.

BIO-MPM-1 contains proteins but does not contain albumin, growth factors or hormones other than genetically-engineered Human Recombinant Insulin (rhI). The rhI is essential for various cell lines and plays an important role in:

- ◆ Long-Term Growth
- ◆ Carbohydrate Metabolism
- ◆ Stimulating the Proliferation of Cells

The removal of serum and/or other animal-derived constituents for all intents and purposes can be summed up five-fold into the following major categories:

- ◆ The High Cost of Serum & Its Components including Serum-Testing Down-Time
- ◆ The Inherent Biological & Source Variability and Variation of those Components
- ◆ The Introduction of Possible Contaminants & Toxic Elements To Cell Lines
- ◆ Down-Stream Processing & Final Purification
- ◆ Regulatory Issues Associated with Serum and its By-Products

Replacing serum necessitates taking into consideration all those possible factors that may affect proliferation of a particular cell type as all cell types have their own individual niche requirements. *BIO-MPM-1 Multi-Purpose SFM* without L-Glutamine and with its relatively lower protein content, typically represent the requirements for promoting cell growth without the worry of the often untoward effects of a BSA-supplemented medium. Often, the lower protein content in highly-defined cultures offers greater potential for specific cell growth while maintaining nearly equivalent product titers.

The absence of exotic growth factors make these media coincide to fit your requirements and at the same time is more cost-efficient. It only requires the addition of L-Glutamine (a required essential amino acid in practically all cell culture media formulations) and antibiotics that are added to eliminate microbial contaminants but at lesser concentrations than in serum-supplemented media. Serum proteins have a tendency to bind with some of the supplemented antibiotic, so in a serum-free medium environment, the absence of these proteins may increase the vulnerability of certain cells to the pharmacokinetics of the antibiotics.

This serum-free (SF) medium also contains constituents that include a typical and wide variety of, among others:

- ◆ Inorganic Salts
- ◆ Vitamins
- ◆ Amino Acids
- ◆ Glucose
- ◆ Insulin, Human Recombinant
- ◆ Phenol Red

Some Predominant Characteristics of BIO-MPM-1 without Glutamine include:

- § Ready-To-Use Base Formulation
- § Serum-Free
- § BSA-Free
- § Eliminates Serum-Screening Down-Time
- § More Precise Evaluation of Cell Function
- § Improves Cell Adaptation Time
- § Promotes Cell Performance and Productivity
- § More Uniform & Consistent Media Performance
- § Easier Product Purification & Downstream Processing
- § Sterile-Filtered(0.1µ),Cell-Culture and Endotoxin-Tested

Storage & Handling Precautions and Disclaimer:
For *in vitro* diagnostic use only.

BIO-MPM-1 SFM without L-Glutamine should be stored at 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.

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.
- 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
Cell-Culture:	Test and Record
Cell Line:	Vero
Endotoxins:	Test and Record
Osmolality:	290-330 mOsm/kg
pH:	7.2-7.5
Sterility:	Sterile

Auxiliary Products

Product Name	Catalog Number	Storage Temperature
L-Glutamine Solution	03-020-1	-20°C
Alanyl-Glutamine Solution	03-022-1	-20°C
Crystalline Trypsin	03-047-1	-20°C
Soybean Trypsin Inhibitor(SBTI)	03-048-1	-20°C
Fibronectin	03-090-1	2-8°C
DCCM-1 without L-Glutamine	05-010-1	2-8°C
DCCM-1 10X Conc., without L-Glutamine, without Sodium Bicarbonate	05-010-5	2-8°C
DCCM-2 without L-Glutamine	05-015-1	2-8°C
DCCM-2 10X Conc., without L-Glutamine, without Sodium Bicarbonate	05-015-5	2-8°C
Low Protein Medium BSA-Free(LPM) without L-Glutamine	05-040-1	2-8°C
Low Protein Medium BSA-Free(LPM) 10X Conc., without L-Glutamine, without Sodium Bicarbonate	05-040-5	2-8°C
BIOINSECT-1,with Glutamine	05-050-1	2-8°C
BIO-MPM-1, Multi-Purpose SFM, without L-Glutamine	05-060-1	2-8°C
BIOCHO-1 Serum-Free Medium Base without L-Glutamine	05-061-1	2-8°C
BIOCHO-2 Serum-Free Medium Base without L-Glutamine	05-062-1	2-8°C
Serum-Free Cell Freezing Medium	05-065-1	2-8°C
NutriVero VP1™ AnimalComponent-Free Medium for the Monolayer Culture of Vero Cells(NutriVero VP1,ACF SFM)	05-066-1	2-8°C
NutriVero VP2™ AnimalComponent-Free Medium for the Microcarrier Suspension Culture of Vero Cells(NutriVero VP1,ACF SFM)	05-067-1	2-8°C
Nutristem™hESC Xeno-Free Serum-Free Medium for Human Embryonic Stem Cells with HSA	05-100-1	2-8°C
AF Nutristem™hESC Xeno-Free Serum-Free Medium for Human Embryonic Stem Cells without HSA	05-102-1	2-8°C
Mesenchymal Stem Cell Growth Medium(Ready-To-Use)	05-300-1	Please See Product labels
Mesenchymal Stem Cell Adipogenic Differentiation Medium (Ready-To-Use)	05-301-1	Please See Product labels
Mesenchymal Stem Cell Chondrogenic Differentiation Medium (Ready-To-Use)	05-302-1	Please See Product labels
Mesenchymal Stem Cell Osteogenic Differentiation Medium(Ready-To-Use)	05-303-1	Please See Product labels
BIOGRO-1 Serum-Free Medium Supplement 50X Conc.	05-600-1	-20°C
BIOGRO-2 Serum-Free Medium Supplement 50X Conc.	05-610-1	-20°C
BIOGRO-CHO Serum-Free Medium Supplement 100X Conc.	05-620-1	-20°C
Human Serum Albumin(HSA) Solution,10%), Optimized for Human Embryonic Stem Cells(hESC)	05-720-1	-20°C

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) Biological Industries (BI) *Product Guide*, "Serum-Free Medium," pps.4-5.