

DMEM/F12 Basal Medium

USER GUIDE

DMEM/F12 basal medium with HEPES and L-alanyl-L-glutamine for cell culture

Catalog # LSB-101-1, LSB-101-6, LSB-101-12

Product Description

Defined Bioscience's DMEM/F12 is a fully defined basal medium for use in the culture of a wide range of mammalian cells. DMEM/F12 is a 1:1 mixture of DMEM (a modified Basal Medium Eagle (BME) formulation with higher concentrations of amino acids and vitamins) and Ham's F-12 (modified from Ham's F-10 with increased choline, inositol, putrescine, and other amino acids), providing an optimized environment for a broad range of cell types. The medium is designed to improve cell growth and maintain cell health, resulting in improved cell viability and enhanced metabolic activity. Defined Bioscience's DMEM/F12 is buffered with HEPES and sodium bicarbonate, offering a comprehensive buffering system which helps to maintain pH stability and minimize the effect of CO₂ fluctuations in standard incubator conditions for mammalian cell culture. Additionally, this formulation includes L-alanyl-L-glutamine in place of glutamine, which enhances cell metabolism and reduces the risk of cell death, while also improving medium stability and cell culture consistency. Our DMEM/F12 contains no proteins, lipids or growth factors, and depending on your intended use, may require supplementation with growth factors or serum.

With our DMEM/F12, you can achieve higher cell densities, improve protein expression, and optimize the performance of your cells. This medium is ideal for a wide range of cell culture applications, including the culture of primary cells, stem cells, and various cell lines. The medium is sterile and free from mycoplasma contamination, and it is compatible with standard culture conditions, including CO₂ incubation. With its unique blend of DMEM and Ham's F-12 media, HEPES-based buffering, and L-alanyl-L-glutamine, our DMEM/F12 provides a reliable, consistent, and high-performance cell culture medium for your research needs.

Defined Bioscience's DMEM/F12 can be used in place of standard DMEM/F12 for most applications, and can also be used in combination with Defined Bioscience's HiDef-B8 400X Supplement (Catalog # LSS-204) for a complete pluripotent stem cell (PSC) maintenance medium. DMEM/F12 is sold in 500-mL units in PET bottles (with ~130-mL overhead space) with HDPE caps, and in six- or 12-bottle cases.

Contents and Storage

Content	Catalog #	Amount	Storage	Shelf life
DMEM/F12 basal medium	LSB-101-1 (Mfr #: 98-1643-CV)	1 x 500 mL	Store at 2-8°C (protect from light)	2 years from date of manufacture
	LSB-101-6 (Mfr #: 98-1643-CV)	6 x 500 mL	Store at 2-8°C (protect from light)	2 years from date of manufacture
	LSB-101-12 (Mfr #: 98-1643-CV)	12 x 500 mL	Store at 2-8°C (protect from light)	2 years from date of manufacture

Product Specifications

Our DMEM/F12 is produced under Current Good Manufacturing Practice (cGMP) regulations, and passes USP standards for sterility, endotoxin (<0.25 EU/mL), and mycoplasma. Product pH is specified at pH 7.2 +/- 0.2 at 20-25°C, and osmolality at 335 +/- 30 mOsm/kg H₂O. Please see the CoA for the lot number associated with your order for more information.

Our DMEM/F12 includes sodium bicarbonate, HEPES, pyruvate, L-alanyl-L-glutamine, and phenol red. For a full formulation list, please contact us at info@definedbioscience.com.

For Research Use Only

INGREDIENTS FOR CELL CULTURE
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Product Usage

Sterility: Use appropriate aseptic technique when handling DMEM/F12. Our DMEM/F12 is formulated cGMP guidelines for sterility, and so additional sterilization and autoclaving are strongly discouraged. Ensure that all equipment is sterile before use.

Receipt and Preparation: Before using DMEM/F12, ensure that the medium is stored at 2-8°C and is within the expiration date. Warm the medium to room temperature before use, but avoid warming it above 37°C.

Supplementation: DMEM/F12 is a basal medium that can be supplemented with a variety of growth factors, hormones, and other additives to support the specific needs of your cells. The recommended concentration of these supplements can vary depending on the cell type and application. Consult the literature or manufacturer's recommendations for the appropriate supplements and concentrations for your application. For stem cell culture, we recommend Defined Bioscience's B8 400X Supplement (Catalog # LSS-204).

pH Adjustment: Our DMEM/F12 contains sodium bicarbonate and HEPES buffering agents to maintain a stable pH. However, the pH of the medium may need to be adjusted depending on the supplements added, the cell type being cultured, and culture conditions. Use a pH meter or pH paper to adjust the pH to the optimal range for your cells using cell culture-grade HCl and/or NaOH as needed.

Cell Culture: DMEM/F12 can be used for the culture of a wide variety of cell types, including primary cells, stem cells, and immortalized cell lines. Follow standard cell culture procedures for seeding, subculturing, and maintaining your cells. Avoid overconfluent cultures or using old medium, as this can lead to cell stress and reduced viability. For information on using DMEM/F12 for the culture of PSCs, please see our User Guide for B8 400X Supplement.

Storage: DMEM/F12 can be stored for up to 12 months after the manufacturing date at 2-8°C if protected from light. Once opened, use the remaining medium within two weeks and discard any remaining medium. Do not freeze the medium for later use. Storage conditions must be adjusted based on manufacturer recommendations once modified with supplemental products.

Limited Product Warranty

Defined Bioscience and/or its affiliate(s) warrant their products as set forth in the Defined Bioscience General Terms and Conditions of Sale. If you have questions, please contact Defined Bioscience at info@definedbioscience.com.