



ESC-Sure™ DMEM/F12, 1x liquid (Dulbecco's Modified Eagle Medium/Nutrient Mixture F12)

Product Information

Catalog Number **ASM-5002**

Description Dulbecco's Modified Eagle's Medium/Ham's Nutrient Mixture F-12 (DMEM:F-12) is a 1:1 mixture of DMEM and F-12 (see below). This mixture supports the growth of a wide range of mammalian cells under serum-free conditions when supplemented with hormones, growth factors and additional nutrients.

Dulbecco's Modified Eagle's Medium (DMEM)¹ is a modification of Basal Medium Eagle (BME) medium. Originally formulated by Renato Dulbecco to support the growth of non-transformed mouse and chicken cells, DMEM contains approximately four times as much of the vitamins and amino acids present in the original Eagle's Medium.

Ham's Nutrient Mixture F-12² (F-12) was originally formulated for the serum-free growth of Chinese Hamster Ovary (CHO) cells, lung cells and mouse L-cells. It now is widely used with whole or dialyzed serum, or in combination with hormones and other supplements for serum-free cultures. F-12 supports the growth of a broad spectrum of mammalian and hybridoma cells.

Applied StemCell's ESC-Sure™ DMEM/F12 medium (1X) is tested to support an undifferentiated culture of hESC when used in "hESC complete medium" (recipe on the right). ESC-Sure™ DMEM/F12 medium (1X) contains 2.5 mM L-glutamine, 14 mM sodium bicarbonate and pyridoxine hydrochloride. It contains no proteins or growth promoting agents, and requires supplementation to be a "complete" medium. See right panel for detailed information. HEPES buffer at a final concentration of 15 mM is included to compensate for the loss of buffering capacity resulting from the omission of serum, providing a more effective buffering capacity in the optimum pH range of 7.2 to 7.4.

500 ml hESC complete medium contains:

Component	Amount/ Conc.
ESC-Sure™ DMEM/F12	380 mL
ESC-Sure™ fetal bovine serum (FBS)*	100 mL
100 x non-essential amino acids (200 mM)*	5 mL
Diluted beta-mercaptoethanol (3.5 mL to 5 mL water and made fresh)*	5 mL
100x Penicillin-streptomycin (5 mg/mL)*	5 mL
Basic fibroblast growth factor (bFGF)*	4 ng/mL

* Items not included in ASM-5001.

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Size	400 mL
Application	Human embryonic stem cell (hESC) and other mammalian cell culture
Storage and Shelf Life	Store at 2-8°C in the dark. Indication of deterioration of the medium may be recognized by the following observation: color change, pH change, turbidity, and precipitate or particulates. Store for up to 1 year after manufacture.
Shipping	Room temperature.
Restricted Use	This product is for research use only and not intended for human or animal diagnostic, in vitro diagnostics, clinical procedures or therapeutic uses.

References

1. Dulbecco R, and Freeman G. (1959). "Plaque production by the polyoma virus". *Virology* 8, 396-397.
2. Ham R.G. (1965) Clonal growth of mammalian cells in a chemically defined, synthetic medium. *PNAS* 53:288-293.