

# Product Information

## Glutamine-Free Media — Dulbecco's Modified Eagle's Medium/ High Modified

with 4500 mg/L dextrose, with 110 mg/L sodium pyruvate, without ferric nitrate, without L-glutamine

CATALOG NO. 51435C

### Description

The GS System™ uses the Glutamine Synthetase (GS) gene as a selectable marker for the expression of recombinant proteins in mammalian cells, especially NS0 and CHO cells. Cell lines transfected with the GS gene are selected on the basis of their ability to grow in glutamine-free medium. The system has significant advantages in speed and efficiency of cell line development resulting in high productivity of antibodies and other recombinant proteins.

A glutamine-free formulation of Dulbecco's Modified Eagle's Medium/High Modified (DMEM/High Modified) is available for the growth of NS0 and CHO cells containing the GS expression system. Cells cultured in this medium require supplementation with GS Supplement 50X (Catalog No. 58672C), which is a mixture of amino acids and nucleosides, and Fetal Bovine Serum (FBS) that has been dialyzed (Catalog No. 12117C).

### Precautions

Use aseptic technique when handling or supplementing this medium. This product is for further manufacturing use. THIS PRODUCT IS NOT INTENDED FOR HUMAN OR THERAPEUTIC USE.

### Storage

Store medium protected from light at 2 to 8 C. Do not freeze. Do not use after the expiration date.

### Indications of Deterioration

Medium should be clear of particulates and flocculent material. Do not use if medium is cloudy or contains precipitate. Other evidence of deterioration may include color change, pH shift or degradation of physical or performance characteristics.

### Preparation Instructions

Supplements, such as antibiotics, can be added to the sterilized solution using aseptic technique. Storage conditions and shelf life of the supplemented product may be affected by the nature of the supplements. Sterile serum should not be refiltered before or after being added to sterile medium because growth promoting capacity may be reduced upon refiltration.

### Formulation

Component (all components measured in mg/L)	
<b>INORGANIC SALTS</b>	
Calcium chloride anhydrous	200.000
Magnesium sulfate anhydrous	97.670
Potassium chloride	400.000
Sodium bicarbonate	3700.000
Sodium chloride	6400.000
Sodium phosphate monobasic monohydrate	125.000
<b>VITAMINS</b>	
D-calcium pantothenate	4.000
Choline chloride	4.000
Folic acid	4.000
i-inositol	7.000
Niacinamide	4.000
Pyridoxine HCl	4.000
Riboflavin	0.400
Thiamine HCl	4.000
<b>AMINO ACIDS</b>	
L-arginine HCl	84.000
L-cystine 2HCl	62.570
Glycine	30.000
L-histidine HCl monohydrate	42.000
L-isoleucine	104.800
L-leucine	104.800
L-lysine HCl	146.200
L-methionine	30.000
L-phenylalanine	66.000
L-serine	42.000
L-threonine	95.200
L-tryptophan	16.000
L-tyrosine 2Na dihydrate	103.790
L-valine	93.600
<b>OTHER</b>	
Dextrose anhydrous	4500.000
Phenol red sodium salt	15.930
Sodium pyruvate	110.000

#### United States

SAFC Biosciences, Inc.  
13804 W. 107th Street  
Lenexa, Kansas 66215  
USA  
Phone +1 913-469-5580  
Toll free-USA 1 800-255-6032  
Fax +1 913-469-5584  
E-mail info-na@sial.com

#### Europe

SAFC Biosciences Ltd.  
Smeaton Road, West Portway  
Andover, Hampshire SP10 3LF  
UNITED KINGDOM  
Phone +44 (0)1264-333311  
Fax +44 (0)1264-332412  
E-mail info-eu@sial.com

#### Asia Pacific

SAFC Biosciences Pty. Ltd.  
18-20 Export Drive  
Brooklyn, Victoria 3025  
AUSTRALIA  
Phone +61 (0)3-9362-4500  
Toll free-AUS 1 800-200-404  
Fax +61 (0)3-9315-1656  
E-mail info-ap@sial.com

## Characteristics

### Appearance

Clear orange-red solution

### Endotoxin

≤ 1.0 EU/mL

### Osmolality (as supplied)

320 - 360 mOsm/kg H<sub>2</sub>O

### pH (as supplied)

7.0 - 7.4

### Sterility

No microbial growth detected

## References

1. Eagle, H., *Science* (1959) 130:432.
2. Dulbecco, R. and Freeman, G., *Virology* (1979) 8:396.
3. Smith, J. D., Freeman, G., Vogt, M., and Dulbecco, R., *Virology* (1960) 12:185.
4. Morton, H. J., *In Vitro* (1970) 6:89.
5. Cockett, M. I., Bebbington, C. R., and Yarranton, G. T., *Bio/Technology* (1990) 8:662.
6. Brown, M. E., Renner, G., et al. *Cytotechnology* (1992) 9:231.
7. Bebbington, C. R., Renner, G., et al., *Bio/Technology* (1992) 10:169.

#### Warranty, Limitation of Remedies

S AFC Biosciences warrants to the purchaser for a period of one year from date of delivery that this product conforms to its specifications. Other terms and conditions of this warranty are contained in SAFC Biosciences' written warranty, a copy of which is available upon request. ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE EXCLUDED. In no case will SAFC Biosciences be liable for any special, incidental, or consequential damages arising out of this product or the use of this product by the customer or any third party based upon breach of warranty, breach of contract, negligence, strict tort, or any other legal theory. SAFC Biosciences expressly disclaims any warranty against claims by any third party by way of infringement or the like. THIS PRODUCT IS INTENDED FOR PURPOSES DESCRIBED ONLY AND IS NOT INTENDED FOR ANY HUMAN OR THERAPEUTIC USE.

Additional Terms and Conditions are contained in the product Catalog, a copy of which is available upon request.

The GS System™ is a trademark of Lonza Biologics.

© 2006 SAFC Biosciences, Inc.

Issued December 2006 P51435  
1203 1005 0406 0606 0906

[www.safcbiosciences.com](http://www.safcbiosciences.com)

#### United States

SAFC Biosciences, Inc.  
13804 W. 107th Street  
Lenexa, Kansas 66215  
USA

Phone +1 913-469-5580  
Toll free-USA 1 800-255-6032  
Fax +1 913-469-5584  
E-mail info-na@sial.com

#### Europe

SAFC Biosciences Ltd.  
Smeaton Road, West Portway  
Andover, Hampshire SP10 3LF  
UNITED KINGDOM

Phone +44 (0)1264-333311  
Fax +44 (0)1264-332412  
E-mail info-eu@sial.com

#### Asia Pacific

SAFC Biosciences Pty. Ltd.  
18-20 Export Drive  
Brooklyn, Victoria 3025  
AUSTRALIA

Phone +61 (0)3-9362-4500  
Toll free-AUS 1 800-200-404  
Fax +61 (0)3-9315-1656  
E-mail info-ap@sial.com