Insulin-Transferrin-Selenium Supplement (100×)

Description

TargetMol Insulin-Transferrin-Selenium Supplement (100×) is a high-quality additive commonly used for serum-free or low serum cell culture, providing critical nutritional support for cell growth and metabolism. Insulin promotes the uptake of glucose and amino acids by cells, enhancing cell proliferation; Transferrin is responsible for the transport of iron ions and maintaining normal cellular metabolic functions; Selenium, as an important trace element, participates in the regulation of antioxidant enzyme activity and helps maintain cell vitality and stability. This product has clear ingredients, stable batches, and is suitable for the cultivation of various adherent or suspended cells, effectively reducing serum dependence and improving experimental reproducibility and controllability.

This product is a 100 × concentrated solution, sterile filtered, and all raw materials do not contain animal derived substances. When used, it can be added to the basic culture medium at a ratio of 1:100. Adding this product to the culture system can reduce the amount of fetal bovine serum from the conventional 10% to 2-4% while ensuring cell growth.

Product Applications

Suitable for general serum-free or low-serum cell culture systems to support the growth and maintenance of a variety of routine cell types.

Comparison of different ITS Media Supplements

Product Name	C0213 ITS-G	C0214 ITS-A	C0215 ITS-X
Insulin (mg/L)	1000	1000	1000
Transferrin (mg/L)	550	550	550
Sodium Selenite (mg/L)	0.67	0.67	0.67
Sodium Pyruvate (mg/L)	/	11000	/
Ethanolamine (mg/L)	/	/	200
Media	MEM, RPMI-1640, or media with sodium pyruvate	MEM, RPMI-1640, or media without sodium pyruvate	MEM, F-12, DMEM, DMEM/F-12, or media with sodium pyruvate

Instructions

I. Preparation:

Ensure the product is fully thawed and mixed thoroughly before use. Perform all procedures under sterile conditions to prevent contamination.

II. Addition Ratio:

Add the supplement to culture medium at a 1:100 ratio (e.g., 1 mL supplement per 100 mL complete culture medium). Mix gently to ensure uniform distribution.

III. Instructions:

After addition, the medium can be used directly for cell culture without further treatment. Depending on the specific cell type and experimental requirements, the serum concentration may be adjusted, or the product may be used in combination with low-serum or serum-free culture systems. During the initial stage of culture, it is recommended to supplement the medium with 2%–4% fetal bovine serum (FBS). Once the cells have gradually adapted to the culture conditions, the FBS concentration may be further reduced.

Storage Conditions

Store at 4°C protected from light. Stable for one year.

Precautions

1. Practice sterile techniques to prevent microbial contamination.
2. Some cells may exhibit reduced growth rates immediately after lowering serum concentration. It is recommended to gradually reduce serum levels to allow for adaptation.
3. This product is for professional research use only. It must not be used for clinical diagnosis, treatment, food, or pharmaceutical applications, and should not be stored in residential or other non-professional settings.
4. This product may be irritating to the skin, eyes, and respiratory tract. To ensure safety, always wear a lab coat and disposable gloves when handling.

Product Formulation Table

Components	MW	Concentration (mg/L)	mM
Insulin	5807.6	1000	0.172189
Transferrin	80000	550	0.006875
Sodium Selenite	172.94	0.67	0.003874
Potassium Chloride	74.55	400	5.365526
Sodium Bicarbonate	84.01	2200	26.187359
Sodium Chloride	58.44	6800	116.358658
Sodium Phosphate monobasic hydrate	137.99	140	1.014566
D-(+)-Glucose	180.16	1000	5.550622

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