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Not for use in diagnostic procedures.



Insulin-Transferrin-Sodium Selenite Supplement

 **Version: 10**
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Serum-free media supplement

Cat. No. 11 074 547 001 50 mg
for 5 l medium

Store lyophilizate at +2 to +8°C.

1.	General Information	3
1.1.	Contents	3
1.2.	Storage and Stability	3
	Storage Conditions (Product)	3
	Storage Conditions (Working Solution).....	3
	Reconstitution	3
1.3.	Additional Equipment and Reagent required	3
1.4.	Application	3
2.	How to Use this Product	4
2.1.	Before you Begin	4
	Safety Information	4
2.2.	Parameters	4
	Biological Activity	4
	Purity.....	4
	Working Concentration.....	4
3.	Additional Information on this Product	4
3.1.	Test Principle	4
4.	Supplementary Information	5
4.1.	Conventions.....	5
4.2.	Changes to previous version.....	5
4.3.	Trademarks.....	6
4.4.	License Disclaimer	6
4.5.	Regulatory Disclaimer.....	6
4.6.	Safety Data Sheet	6
4.7.	Contact and Support.....	6

1. General Information

1.1. Contents

Vial / Bottle	Label	Function / Description	Content
1	Insulin-Transferrin-Sodium Selenite Supplement	<ul style="list-style-type: none"> Lyophilized Contains 25 mg insulin, 25 mg transferrin (approximately 30% iron saturated), 25 µg sodium selenite (based on selenous acid). Filtered through 0.2 µm pore size membrane prior to lyophilization. 	1 bottle, 50 mg

1.2. Storage and Stability

Storage Conditions (Product)

When stored at +2 to +8°C, the lyophilizate is stable through the expiration date printed on the label.

Vial / Bottle	Label	Storage
1	Insulin-Transferrin-Sodium Selenite Supplement	Store at +2 to +8°C.

Storage Conditions (Working Solution)

Store reconstituted solution in aliquots at –15 to –25°C.

⚠ Avoid repeated freezing and thawing.

Reconstitution

Reconstitute the Insulin-Transferrin-Sodium Selenite Supplement in 5 ml autoclaved, double-distilled water to obtain a 1,000x-concentrated stock solution.

i Use 100 µl of 1,000x stock solution for 100 ml medium.

1.3. Additional Equipment and Reagent required

For reconstitution of lyophilizate

- Autoclaved, double-distilled water

For serum-free cultivation

- Basal medium, such as DMEM/F 12 (1:1)

1.4. Application

Insulin-Transferrin-Sodium Selenite Supplement can be used:

- As a basal growth factor supplement in conjunction with other essential nutrients for a variety of cell types.
- To reduce the serum requirements in cell culture media.
- The supplement contains the most important growth factors, permitting significant reduction in serum requirements for cellular growth. Many cell lines (such as BHK, HeLa, Vero, MDCK, CHO) will grow in this supplement plus 1 to 2% serum with comparable growth rates as in 10% serum.
- To culture cells under completely defined serum-free conditions, it can be used as a basal growth factor supplement to which other cell type-specific nutrients and growth factors are added.

2. How to Use this Product

2.1. Before you Begin

Safety Information

The raw material from which transferrin was isolated has been tested for the presence of HIV-I antibodies and HBs-antigen and found to be negative, according to the current quality control procedures.

2.2. Parameters

Biological Activity

The Insulin-Transferrin-Sodium Selenite Supplement is tested for the serum-free cultivation of 3T3 (A31) cells (DMEM/F 12 [1:1] containing in addition 10 ng/ml Basic Fibroblast Growth Factor, human (hbFGF)*, 1×10^{-6} dexamethasone and 100 µg/ml ovalbumin).

Purity

Insulin: >99% (HPLC)
Transferrin: >98% (SDS-PAGE)
Sodium selenite: >99%

Working Concentration

For serum-free cell culture, the recommended concentrations are 5 µg/ml insulin, 5 µg/ml transferrin, and 5 ng/ml sodium selenite (3.0×10^{-8} M), corresponding to 100 µl Insulin-Transferrin-Sodium Selenite Supplement (1,000x) per 100 ml culture medium.

3. Additional Information on this Product

3.1. Test Principle

The Insulin-Transferrin-Sodium Selenite Supplement contains three of the most important growth factors for many cell types. Insulin is a component of serum-free media formulations for all primary cells and cell lines examined so far. In addition to the stimulation of cell growth, classical insulin responses such as increased fatty acid and glycogen synthesis are seen in serum-free medium. The concentration of insulin required for stimulation of cell growth in almost all cases is extraordinarily high compared with the physiological concentration. Insulin may be mimicking insulin-like growth factors (IGFs, somatomedins) for some cell lines, and high insulin concentrations may be necessary in order to occupy receptors which have a high affinity for IGFs and a lower affinity for insulin. In addition to insulin, transferrin is also present as a medium component for all cells examined. Transferrin was identified as an essential growth factor for many cell types. Most of the stimulatory activity of transferrin is presumably related to its iron binding properties. The remaining stimulatory activity of transferrin may be due to binding by the molecule of other metal ions which may be present in the medium at concentrations which are toxic. Selenium is very often necessary for optimal cell growth. In most basal media formulations, selenium is not included.

Preparation

Insulin is prepared from human recombinant, lyophilized transferrin from human serum; the sodium selenite is synthetic.

4. Supplementary Information

4.1. Conventions

To make information consistent and easier to read, the following text conventions and symbols are used in this document to highlight important information:

Text convention and symbols

 *Information Note: Additional information about the current topic or procedure.*

 **Important Note: Information critical to the success of the current procedure or use of the product.**

① ② ③ etc. Stages in a process that usually occur in the order listed.

① ② ③ etc. Steps in a procedure that must be performed in the order listed.

* (Asterisk) The Asterisk denotes a product available from Roche Diagnostics.

4.2. Changes to previous version

Layout changes.

Editorial changes.

4. Supplementary Information

4.3. Trademarks

All product names and trademarks are the property of their respective owners.

4.4. License Disclaimer

For patent license limitations for individual products please refer to:

List of biochemical reagent products.

4.5. Regulatory Disclaimer

For life science research only. Not for use in diagnostic procedures.

4.6. Safety Data Sheet

Please follow the instructions in the Safety Data Sheet (SDS).

4.7. Contact and Support

To ask questions, solve problems, suggest enhancements or report new applications, please visit our **Online Technical Support Site.**

To call, write, fax, or email us, visit **sigma-aldrich.com**, and select your home country. Country-specific contact information will be displayed.

