gibco
by life technologies

Insulin-Transferrin-Selenium Supplement (100X)
Insulin-Transferrin-Selenium-A Supplement (100X)
Insulin-Transferrin-Selenium-X Supplement (100X)

Description

Insulin-Transferrin-Selenium (ITS) supplementation of many conventional synthetic nutrient media permits substantial reduction in the Fetal Bovine Serum (FBS) requirement for routine maintenance and low density attachment of many adherent cell types. ITS Supplement contains Insulin, Transferrin, and Sodium Selenite, prepared in Earle's Balanced Salt Solution (EBSS) without Phenol Red. In addition, ITS-A and ITS-X contain Sodium Pyruvate and Ethanolamine, respectively. ITS and ITS-A are designed to supplement RPMI-1640 and Earle's Minimal Essential Medium while ITS-X is intended for use as a supplement for F-12 Nutrient Mixture, Dulbecco's Modified Eagle Medium/F-12, DMEM, and Earle's Minimal Essential Medium. All ITS supplements will enhance the growth of various adherent cell types at FBS concentrations less than 4%.

Product	Catalog no.	Amount	Storage	Shelf life*
Insulin-Transferrin-Selenium Supplement (100X)	41400-045	10 mL	2°C to 8°C	18 months
Insulin-Transferrin-Selenium-A Supplement (100X)	51300-044			
Insulin-Transferrin-Selenium-X Supplement (100X)	51500-056			

* Shelf life duration is determined from Date of Manufacture.

Product use

For Research Use Only. Not for use in diagnostic procedures.

Important information

Insulin, transferrin, and selenium are components shown to promote optimal performance of serum-free media and reduce the need for serum supplementation of conventional media used in cell culture.

- Insulin has pleiotropic anabolic effects on mammalian cells, promoting glucose and amino acid uptake, lipogenesis, monovalent cation and phosphate transport, protein, and nucleic acid synthesis.
- Transferrin serves as a carrier for iron and may also help to reduce toxic levels of oxygen radicals and peroxide.
- Selenite is a co-factor for glutathione peroxidase and other proteins and is used as an anti-oxidant in media.
- Pyruvate is an important precursor to amino acid, fatty acid, and cholesterol biosynthetic pathways. Pyruvate can be utilized in the Krebs' cycle, and in gluconeogenesis.
- Ethanolamine can serve as a precursor for the biosynthesis of phosphoglycerides, which are essential to the structure of the plasma membrane and cellular organelles.

Safety information

Read the Safety Data Sheets (SDSs) and follow the handling instructions. Wear appropriate protective eyewear, clothing, and gloves.

Caution: Human origin materials are non-reactive (donor level) for anti-HIV 1 & 2, anti-HCV, and HB_sAg. Handle in accordance with established bio-safety practices.

Use

- Each 10 mL vial of Insulin-Transferrin-Selenium 100X Supplement is sufficient for up to one liter of medium.
- In general, it is necessary to add 2–4% FBS to achieve optimal growth, although some adherent cultures may require less serum supplementation following initial adaptation.
- Store Insulin-Transferrin-Selenium supplemented medium in the dark at 2°C to 8°C.

Formulation*

Component	Concentration (g/L)		
	ITS	ITS-A	ITS-X
Insulin	1.00	1.00	1.00
Transferrin	0.55	0.55	0.55
Sodium Selenite	0.00067	0.00067	0.00067
Sodium Pyruvate	—	11.00	—
Ethanolamine	—	—	0.20

* Prepared in EBSS without Phenol Red.

Explanation of symbols and warnings

The symbols present on the product label are explained below:

			
Manufacturer	Batch code	Use By:	Catalog number
			
Caution, consult accompanying documents	Consult instructions for use	Temperature Limitation	Sterilized using aseptic processing techniques

Limited product warranty

Life Technologies Corporation and/or its affiliate(s) warrant their products as set forth in the Life Technologies' General Terms and Conditions of Sale found on Life Technologies' website at **www.lifetechnologies.com/termsandconditions**. If you have any questions, please contact Life Technologies at **www.lifetechnologies.com/support**.

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For additional technical information such as Safety Data Sheets (SDS), Certificates of Analysis, visit www.lifetechnologies.com/support
For further assistance, email **techsupport@lifetech.com**

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