

HiDef® ITS Serum replacement supplement

USER GUIDE

Defined, feeder-free serum replacement supplement for cell culture

Catalog #: LSS-401-1, LSS-401-10

Product Description

Defined Bioscience's HiDef® ITS is a defined formulation designed for the routine maintenance and low-density attachment of adherent cells under reduced serum conditions. HiDef-ITS is a combination of insulin (to stimulate glucose uptake), transferrin (to facilitate iron transport), and sodium selenite (a potent antioxidant and common component supplied by serum), previously shown to reduce the amount of FBS needed in the culture of a wide range of cell types, including primary cells, immortalized cell lines, and stem cells.

HiDef-ITS is provided as a 100x supplement in Earle's Balanced Salt Solution (EBSS) without phenol red, using animal origin-free componentry (contact Defined Bioscience with any complete formulation requests). Depending on your application, FBS can be reduced to 4% or less when maintaining cells in a medium containing HiDef-ITS.

- **Insulin:** Insulin promotes the uptake of glucose, amino acids, cations, and phosphates, stimulates cell growth and cell cycle progression, and offers anti-apoptotic and lipogenic effects.
- **Transferrin:** Transferrin serves as a high-affinity iron carrier and potent antioxidant, reducing toxicity associated with free iron exposure, and offers further protective benefits to cells in reduced-serum conditions.
- **Sodium selenite:** Sodium selenite additionally serves as an antioxidant, as well as a co-factor for seleno-enzymes.

HiDef-ITS 100x is provided in liquid form in 10-mL volumes, sufficient for 1 L of medium. This supplement can be used with a wide range of basal medium formulations, including Defined Bioscience's fully defined DMEM/F12 basal medium (Catalog # LSB-101). Following initial adaptation and depending on user application, cells cultured in HiDef-ITS can thrive under reduced serum conditions.

Each lot of HiDef-ITS is used in combination with basal medium in performance testing in a culture assay evaluating fibroblast outgrowth and viability.

Contents and Storage

Content	Catalog #	Amount	Storage	Shelf life
HiDef® ITS 100X Supplement (1 vial)	LSS-401-1	1 x 10 mL	Store at 2-8°C protected from light	1 year from date of manufacture
HiDef® ITS 100X Supplement (10-pack)	LSS-401-10	10 x 10 mL		

Product Usage

Sterility: Use appropriate aseptic technique when handling HiDef® ITS. Our HiDef-ITS is sterile-filtered (0.22 µm PVDF), and so additional sterilization and autoclaving are strongly discouraged. Ensure that all equipment is sterile before use.

Receipt and Preparation: Before using HiDef-ITS, ensure that the medium is stored at 2-8°C and is within the expiration date. Warm the medium to room temperature before use as needed, but avoid warming it above 37°C.

Supplementation: HiDef-ITS is a supplement to be added to a basal medium (e.g. DMEM/F12; Defined Bioscience Catalog # LSB-101). The resulting formulation should be supplemented with other components typically required to support the specific needs of your cells. In most cases, FBS concentration can be highly reduced in formulations containing HiDef-ITS, but this will need to be evaluated for your specific cell type and application. The recommended concentration of these other components can vary depending on the cell type and application. Consult the literature or manufacturer's recommendations for the appropriate supplements and concentrations for your application.

For Research Use Only

INGREDIENTS FOR CELL CULTURE
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pH Adjustment: HiDef-ITS is prepared in a solution of EBSS to maintain a stable pH. However, the pH of the medium may need to be adjusted depending on the supplements added, the cell type being cultured, and culture conditions. Use a pH meter or pH paper to adjust the pH to the optimal range for your cells using cell culture-grade HCl and/or NaOH as needed.

Cell Culture: HiDef-ITS can be used for the culture of a wide variety of cell types, including primary cells, stem cells, and immortalized cell lines. Follow standard cell culture procedures for seeding, subculturing, and maintaining your cells. Avoid overconfluent cultures or using old medium, as this can lead to cell stress and reduced viability.

Storage: HiDef-ITS 100X can be stored for up to 12 months after the manufacturing date at 2-8°C if protected from light. Once opened, use the remaining medium within two weeks and discard any remaining medium. Do not freeze the medium for later use. Storage conditions must be adjusted based on manufacturer recommendations once modified with supplemental products.

Limited Product Warranty

Defined Bioscience and/or its affiliate(s) warrant their products as set forth in the Defined Bioscience General Terms and Conditions of Sale. If you have questions, please contact Defined Bioscience at info@definedbioscience.com.