



IrvineScientific®
Grow With Us

IS 293-V™ Medium without L-glutamine

IS 293-V™ Medium (without L-glutamine) is an animal-component-free medium for suspension culture of human embryonic kidney (HEK 293) cells.

Advances in human gene therapy have created great promise in the battle against genetic diseases, as well as cancer, cardiovascular disease and AIDS. Among the viral vectors used, adenovirus plays a prominent role in this new technology.

Serum-free media traditionally includes the presence of serum-derived proteins. To address the growing concerns regarding risks associated with the use of animal-derived components in serum-free media, Irvine Scientific has developed IS 293-V, an animal-component-free medium formulated specifically for the suspension growth of HEK 293 cells. This formulation is free of any components derived from human, bovine or other animal sources and supports long term and high density cell growth along with high levels of adenovirus or recombinant protein production. Figure 1 illustrates that IS 293-V (supplemented with FeNaEDTA) can support high density growth of HEK 293 cells in suspension culture with viable density exceeding cells grown in the presence of transferrin. Figure 2 shows long term, high density growth for over 100 days.

Formulated without transferrin, this medium contains 5 mg/L of recombinant insulin and requires supplementation with 5 µM FeNaEDTA (iron chelate) and 8 mM of L-glutamine for optimum performance. Medium should also be supplemented with 0.1% Pluronic® F-68 for suspension cultures.

IS 293-V is intended for use in the manufacture of adenovirus (or other vectors) and recombinant proteins and is designed for use in 5% CO₂.

Features and Benefits

- When supplemented with L-glutamine and an iron chelate, IS 293-V promotes high density, long-term growth of HEK 293 cells and expression of adenoviral vectors.
- Certificate of Analysis available for each lot.
- IS 293-V has a shelf life of one (1) year when stored at 2-8°C and protected from light.
- Available in packages of 500 mL and 1 L.
- Custom packaging and powder configurations are available.

Catalog Number 91107: IS 293-V Medium without L-glutamine

Adaptation to Serum-Free Culture

HEK 293 cells currently adapted to serum-free medium can be subcultured directly into supplemented IS 293-V with minimal adaptation, though a higher initial density should be used. The cells should be in mid-logarithmic growth phase with high (> 90%) viability. Adaptation of HEK 293 cells to serum-free culture conditions may require either direct or sequential adaptation depending upon cell type and culture conditions. See product insert for adaptation instructions.

Cryopreservation

Serum-free HEK 293 cells may be frozen in 93% supplemented IS 293-V (a 50:50 [v/v] mixture of fresh and conditioned IS 293-V) and 7% DMSO at 0.5-1.0 x 10⁷ cells/mL, using standard cryopreservation techniques. See product insert for instructions.

Partnering

This medium has been optimized for the specific cells we have used. Your cells and application may differ to varying degrees. This medium may be tailored to meet the specific requirements of individual customers. Whether your efforts are focused on optimizing yields, improving product quality or addressing regulatory concerns, Irvine Scientific has the answers to your specific requirements.

For more information on all of our Industrial Cell Culture products, call 1 800 437 5706 and request that your Territory Manager contact you. Visit our website at www.irvinesci.com or e-mail us at nucleus@irvinesci.com.

Note: Always refer to product insert for complete instructions for use.

Irvine Scientific

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CATALOG #91107 REV.5

IS 293-V Growth Performance in Shaker Culture

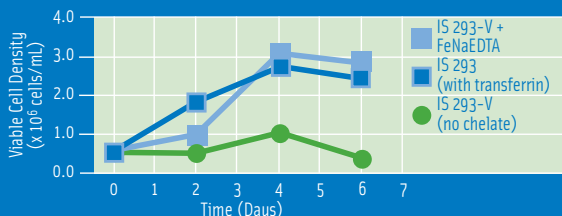


Figure 1. Growth of serum-free adapted HEK 293 cells in IS 293 and IS 293-V. Serum-free adapted HEK 293 cells (grown for at least 5 passages in IS 293) were grown for one passage in transferrin-deficient medium (IS 293-V without iron chelate) and then seeded into the indicated medium at a starting inoculation of 5x10⁵ cells/mL (30 mL medium in a 125 mL shaker flask). Viable cell density was determined over six days. The results show that HEK 293 cells require an iron transport agent (i.e. transferrin or iron chelate). Cells cultured in IS 293-V without chelate do not grow, but when supplemented with FeNaEDTA, the viable cell density achieves levels equivalent to that achieved for cells grown in the presence of transferrin (see IS 293).

HEK 293 Cell Growth in IS 293-V with Iron Chelate

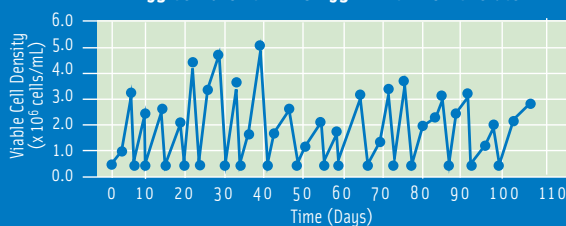


Figure 2. Continuous growth of HEK 293 cells in IS 293-V Animal-Component-Free Medium. Serum-free adapted HEK 293 cells were grown in shaker suspension culture in IS 293-V Medium supplemented with FeNaEDTA, over numerous passages. Viable cell densities in excess of 3x10⁶ cells/mL were consistently achieved.