



IS 293-V

Serum-Free medium for HEK293 cells

- Catalog Number 91107

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.

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

- 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.
- Used for Cryopreservation by freezing cells in 93% IS 293-V Medium + 7% DMSO. See product insert for instructions.
- Shelf life of one (1) year when stored at 2-8°C and protected from light.
- Available in and 1 L packaging.
- Custom formulations, packaging and powder configurations are available.

Adaptation

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.



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 5×10^5 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).

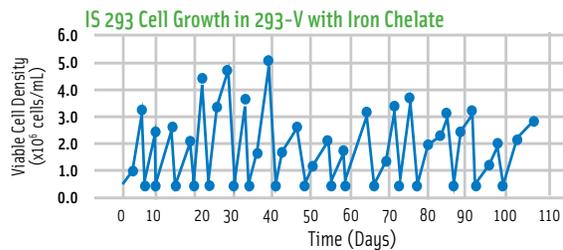


Figure 2. Continuous growth of HEK 293 cells in IS 293-V Animal-Component-Free Medium. Serum-free adapted HEK 293 cells were grown in shaker suspension culture in IS 293-V Medium supplemented with FeNaEDTA, over numerous passages. Viable cell densities in excess of 3×10^6 cells/mL were consistently achieved.

Performance

formulated without transferrin, this medium contains 5 mg/L of recombinant insulin and requires supplementation with 5 μ M 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. 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.

For more information on all of our Cell Culture Products, call 1 (800) 437-5706 and ask for your Territory Manager or visit our website at www.irvinesci.com.

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