Development of Serum Free Medium and Optimization of Porcine Epidemic Diarrhea Virus (PEDV) Vaccine Production

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Abstract

The maintenance of most mammalian cell lines in culture requires the addition of serum to the culture medium. However, serum is a potential source of bacterial, mycoplasmal and viral contamination, and it has a possibility of the introduction of serum proteins, prion and pyrogens into the final vaccine product. For PEDV vaccine production, it is necessary to develop serum free medium which do not cause those problems. A new serum free medium was developed for PEDV vaccine based on DMEM, and the performance of developed serum free medium was evaluated in terms of Vero cell growth and PEDV vaccine production. The cell density, grown in serum free medium developed, was similar with that in serum supplemented medium. Also, it was higher than that in other commercially available serum free medium. The productivity of PEDV vaccine using serum free medium developed and optimum production strategies will be also discussed.

References

1. Hofmann. M., Wyler. R., Propagation of the virus of porcine epidemic diarrhea in cell culture. (1988), J. Clin. Microbiol. 26, 2235-2239.
2. Avshalom M., Arye L., Media for cultivation of animal cells: an overview. (1988) *Cytotechnology*. **1**:199-214.
3. Neuza M. Frazatti-Gallinaa,., Regina M. Mourao-Fuchesa, Rosana L. Paolia, Maria L.N. Silvaa, Cosue Miyakib, Elizabeth J.G. Valentinia, Isaias Rawc, Hisako G. Higashib, 2004.Vero-cell rabies vaccine produced using serum-free medium. Vaccine 23:511-517.