

# Embryonic Stem Cell Screened Fetal Bovine Serum

Thermo Scientific HyClone Embryonic Stem Cell Screened FBS Eliminates the Need to Prescreen Serum Saving Time and Money

Research using embryonic stem cells continues to increase as funding for research grows. Using serum suitable for embryonic stem (ES) cells is critical to this research, as it keeps the cells in their valuable undifferentiated state.

Historically, researchers were required to screen several lots of fetal bovine serum (FBS) to find just one suitable for ES cell research. Now, however, Thermo Scientific HyClone Embryonic Stem Cell Screened FBS eliminates the need to prescreen serum, thus saving both time and money. In addition, HyClone ES Screened FBS provides the assurance that the serum being used has been screened by experienced ES cell culturists.

The screening includes plating efficiency, colony morphology and toxicity tests using murine cells. The protocol was adapted from Gene Targeting, A.L. Joyner, 1995, pg 43.

HyClone ES Screened FBS is selected from the highest quality Defined FBS. Defined FBS is filtered through sequential 40nm (0.04 mm) pore-size rated filters and has an endotoxin specification of  $\leq 10$  EU/ml.

*Art to Science* publications, Vol.17 No.3, Vol.18 No.1 and Vol.18 No. 2, found on [www.HyClone.com](http://www.HyClone.com) contain a series of articles on the history and use of ES cells and culture media considerations.

In November 1998, two teams of scientists published data indicating that they had isolated human ES cells. Both teams were funded with private funds from Geron of Menlo Park, Calif., and accomplished a feat which had evaded researchers for 20 years. Both teams relied on HyClone FBS for this difficult work.

While this discovery has sparked much discussion as to ethical issues involved in working with human ES cells, it has also ignited interest in the potential these cells have for aiding in the treatment of human disease.

Murine ES cells have been used to create both transgenic mice and to study the process of differentiation of these pluripotent cells into various cell types. Research using human embryonic stem cells will focus primarily on the process of differentiation. Geron plans to elucidate this process and develop the ability to drive these embryonic stem cells to differentiate into specific cell types that could find therapeutic use, such as:

- Myocytes for heart repair
- Endothelial cells to treat atherosclerosis
- Pancreatic islet cells to treat diabetes
- Neurons for Parkinson's and Alzheimer's diseases
- Fibroblasts and keratinocytes for wound and burn treatments
- Chondrocytes to replace cartilage in Osteo and Rheumatoid arthritis



Product	Number	Size
ES Cell Screened FBS	SH30070.02E	100 mL
ES Cell Screened FBS	SH30070.03E	500 mL

In addition to these offices, Thermo Fisher Scientific maintains a network of representative organizations throughout the world.

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