

Growth Comparison Studies Between FBS and Other Serum Products

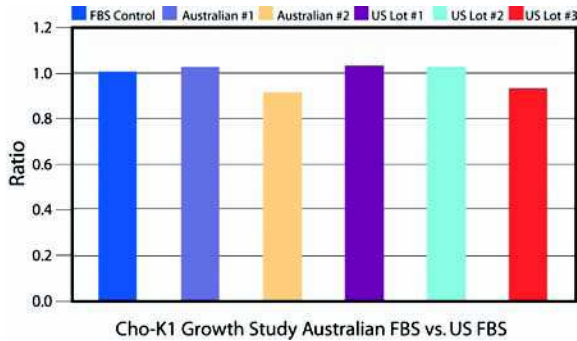
Fetal Bovine Serum (FBS) has been the serum of choice for cell and tissue culture from the beginning. While FBS is an excellent product for many applications, it is subject to shortages and consequently price fluctuations and availability difficulties. As an alternative, Thermo Scientific HyClone Bovine Calf Serum was introduced to the market in various forms. These calf serum products provide advantages in availability, price, and consistency of performance. In 1984, we were first to market with Thermo Scientific HyClone Iron-Supplemented Bovine Calf Serum. Since then, we have introduced other supplemented and processed calf serum products including

Thermo Scientific HyClone Alpha Calf™ Serum, Cosmic Calf™ Serum, FetalClone® I, II, and III, and most recently, Bovine Growth Serum™. To demonstrate the ability of these products to perform as well as FBS in many applications, we provide data comparing FBS to these products along with comparisons of non-U.S. sourced FBS to U.S. sourced FBS. The following growth promotion studies were performed in our R&D department. Our non-U.S. sourced FBS as well as our fetal bovine serum replacements were compared to a U.S. sourced FBS control for their ability to promote culture growth in a variety of popular cell lines. All cultures were grown in T-25 cell

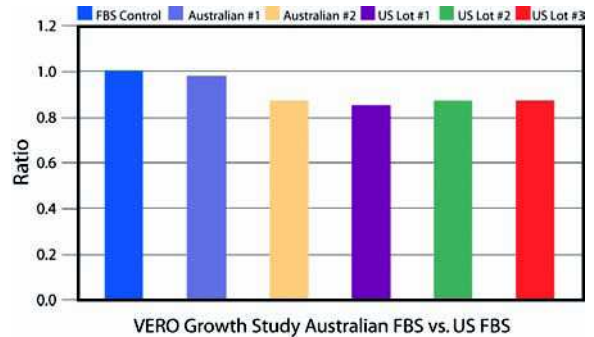
culture flasks using 10 mL of appropriate media supplemented with 10 % serum and checked daily for confluency. Performance was normalized to the FBS control by dividing the cell count from each FBS alternative condition by the cell count from the FBS control. The resulting ratios are presented as relative yields in each study. The ratio, or relative yield, of FBS is always 1.0. Conditions that produce more cells than the control have values greater than 1.0.

Please call your Technical Sales Representative for help in selecting the appropriate product for your applications and for samples.

Australian FBS vs U.S. FBS Growth Study Comparisons

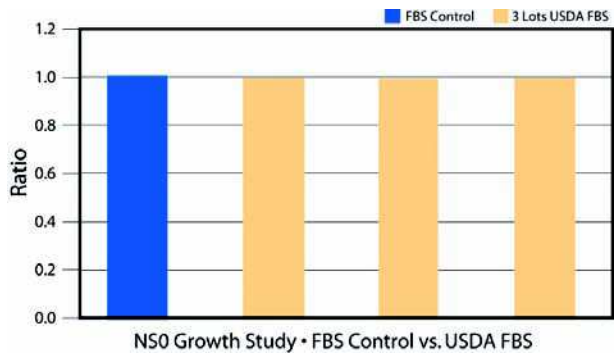
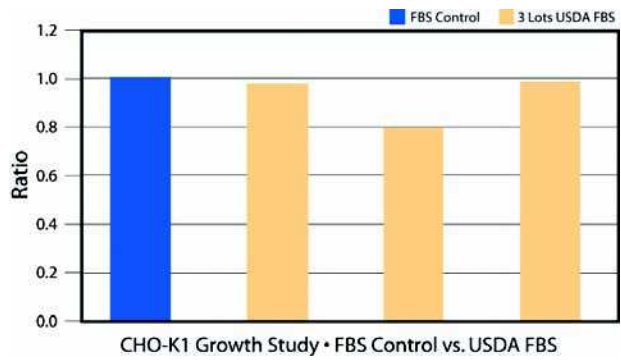
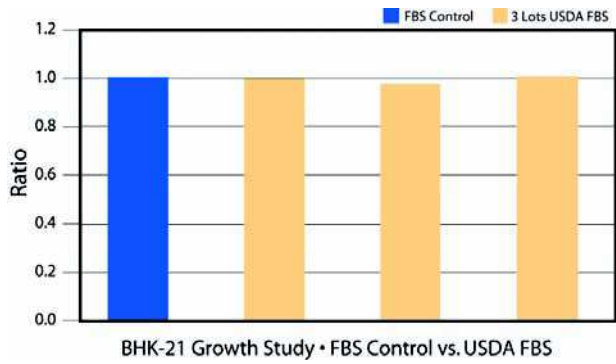
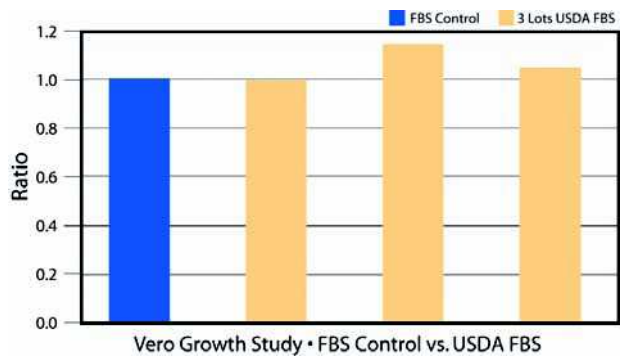
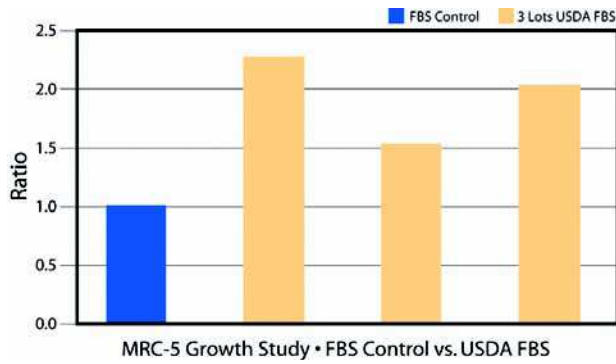


Graph 1: CHO-K1 Growth Study Australian FBS vs. U.S. FBS.

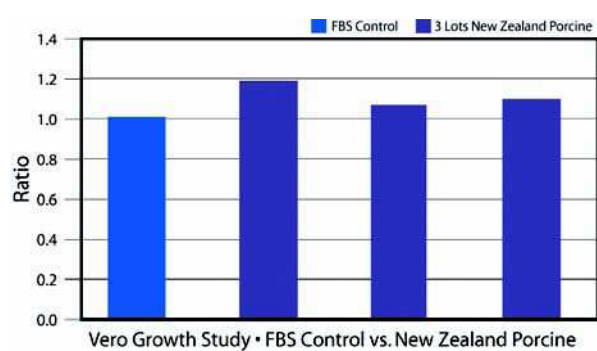
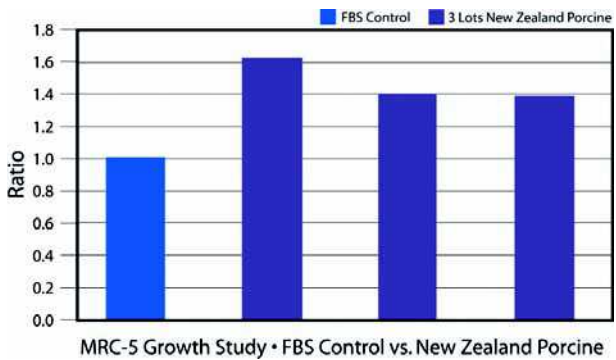


Graph 2: VERO Growth Study Australian FBS vs. U.S. FBS.

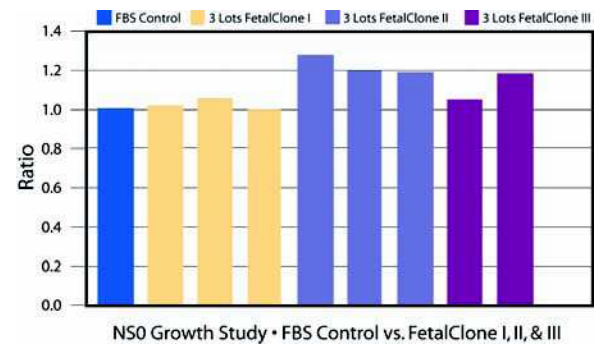
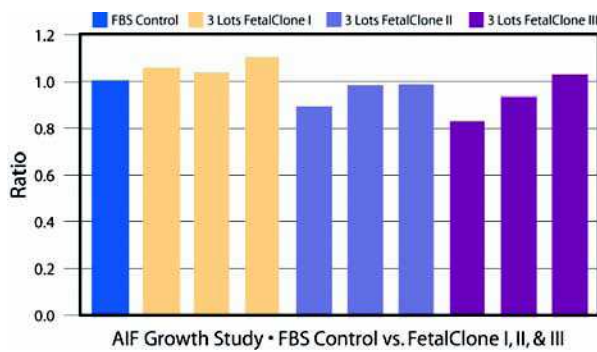
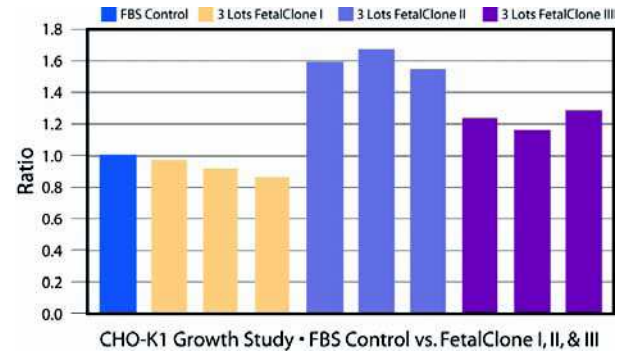
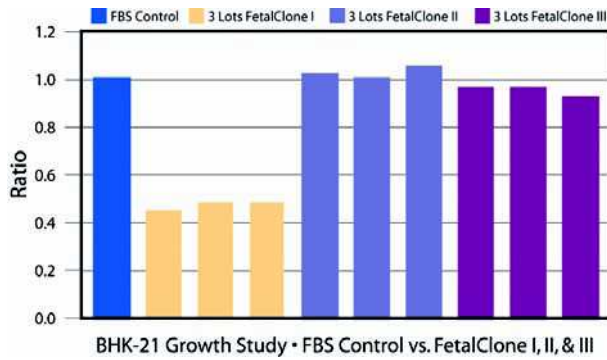
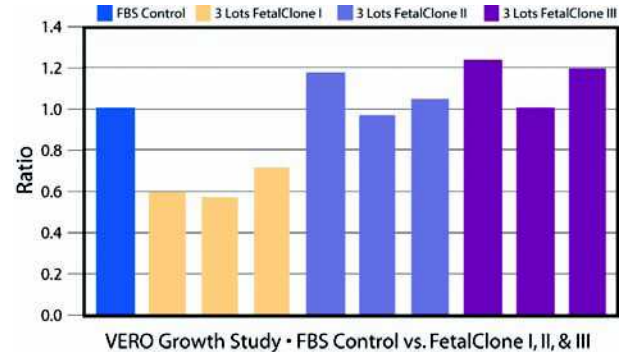
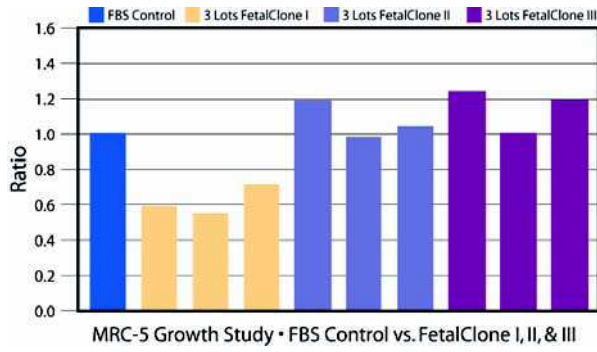
U.S. Sourced FBS Controls vs. USDA Tested Central American Sourced FBS Growth Study Comparisons



U.S. Sourced FBS Control vs. New Zealand Porcine Growth Study Comparisons



U.S. Sourced FBS Control vs. FetalClone® I, II, III Growth Study Comparisons



U.S. Sourced FBS Control vs. New Zealand Cosmic Calf, Iron-Supplemented Calf, and U.S Cosmic Calf Growth Study Comparisons

