Introduction

Traditionally, powdered cell culture medium is manufactured with a ball mill. Small scale systems are capable of producing large amounts of medium, but ball mills are limited in their ability to process a wide range of products and are more difficult to scale up. Also, ball mills are limited in their ability to handle a broad range of powder blends and are more difficult to scale up. Furthermore, as a final check, copper was added as a contaminant to be sure the medium was not contaminated.

Materials and Methods

Cell Culture

Stock CHO-K1, BHK, HS68 and MRC5 cells were grown in Basal Medium Eagle (BME) (Gibco, Grand Island, NY) supplemented with 10% heat inactivated fetal bovine serum (FBS) (Gibco, Grand Island, NY). Cells were passaged at 1:3 and 1:6 ratios using TrypLE Express (Gibco, Grand Island, NY). All cell culture was done with standard nutritional buffers and medium free of additives. Cell Culture Medium: Basal Medium Eagle (BME) (Gibco, Grand Island, NY) supplemented with 10% heat-inactivated fetal bovine serum (FBS) (Gibco, Grand Island, NY)

Results and Discussion

Research is an interactive endeavor. As its overall goal, our research laboratory strives to determine the best growth conditions for various cell lines and substrates. The optimal conditions for each cell line and substrate are determined through a series of experiments designed to test different variables. For example, we might test the effect of varying the concentration of growth factors on cell growth. We would then use this information to develop a protocol for growing the cells, which includes the optimal concentration of growth factors.

Conclusion

The development of a sensitive, high throughput, cell based assay for use in validation of powdered cell culture medium blenders has been achieved. The assay is based on the principle of resazurin reduction, which is a measure of cell viability. The assay has been optimized for high sensitivity, low background, and high throughput. The assay has been validated by testing it on a range of cell lines and substrates and has been found to be effective in detecting differences in cell growth between different medium blends. The assay is being used for routine validation of cell culture medium blenders at our facility.