

Cell Media Dispensing using the Nanodrop™ CAS System



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Introduction

One key success factor in cell dispensing is the ability to dispense a wide range of cell culture media, buffer and cell reagents. Depending on the requirements of the cell line and the nature of the assay, different cell culture media and buffers will be used. Typical cell culture media contain cell growth supplements such as sera which, depending on the concentration at which they are used, have a tendency to foam. The bubble formation may interfere with cell adhesion, dispensing characteristics, or plate reading, adding unacceptable variability during screening.

The data shows successful dispensing of three types of cell culture media at two dispense volumes (1 μ L and 3 μ L) into a total of 18 plates, with Cv values at 4% or below for all plates.

Methods and Materials

In order to test the precision of the Nanodrop CAS instrument for cell media dispensing, F-12K cell culture media (specific for CHO-K1 cells) was dispensed into six 384-well plates without supplementation, six plates with 1% Fetal Bovine Serum (FBS), and six plates with the addition of 1% Bovine Serum Albumin (BSA). Three of the six plates in each group were given a 1 μ L per well dispense, and the other three a 3 μ L dispense. Approximately 200 μ M fluorescein was added to determine the dispensing precision. The dispensing precision per plate as % Cv was determined by reading the plates in a fluorescence plate reader.

Results and Discussion

Dispensing precision for the 18 plates with different combinations of F-12K culture medium and supplementation is graphed in Figures 1-3 below:

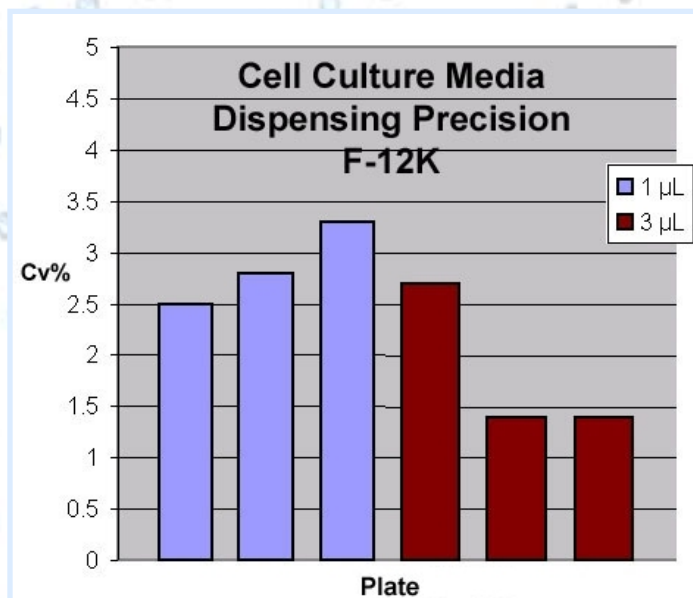


Figure 1: Cell Culture Media Dispensing Precision, F-12K Medium with No Supplementation

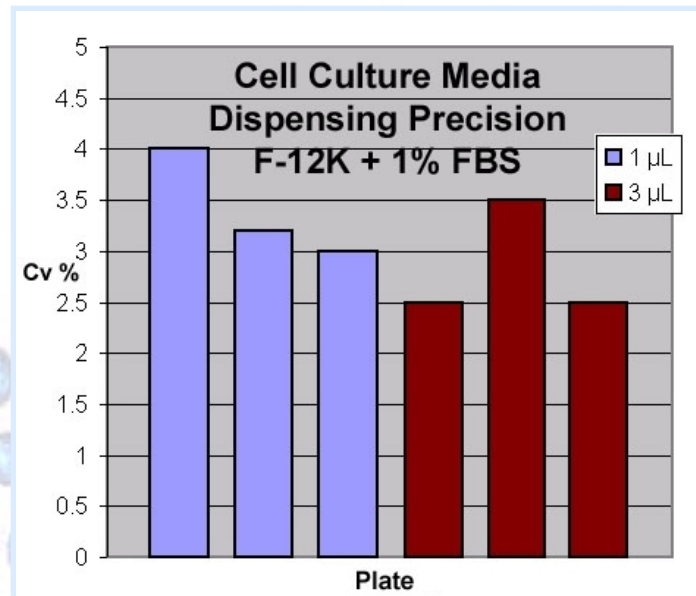


Figure 2: Cell Culture Media Dispensing Precision F-12K Medium with 1% Fetal Bovine Serum (FBS)

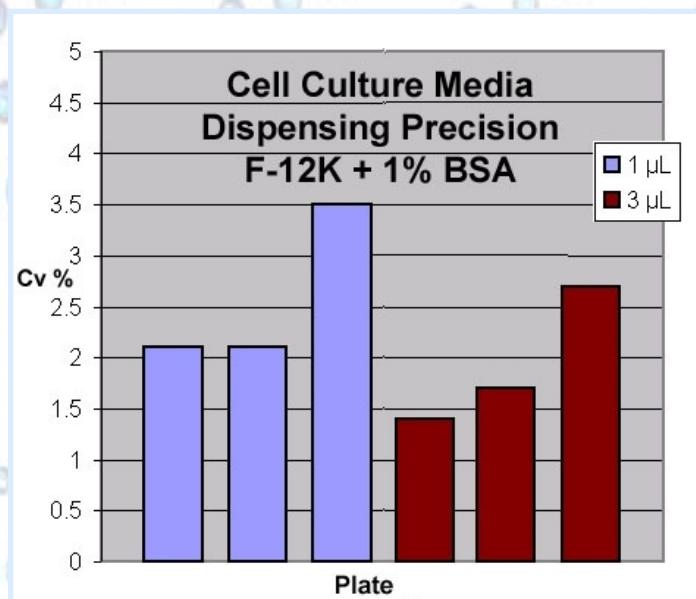


Figure 3: Cell Culture Media Dispensing Precision, F-12K Medium with 1% Bovine Serum Albumin (BSA)