Abstract

Recently, several spectrometers for small volume measurements in order of microliter have been introduced. They are primarily intended for protein determination (or determination of proteins and nucleic acids in one measurement) by direct spectrophotometry or other spectral methods. One of such instruments is the NanoVue^{TM} Plus (GE Healthcare). In this work, we first tried to characterize the instrument in general terms (stability) and to optimize measurement condititions (sample volume). Proteins have been determined by direct spectrophotometry using internal programs of the instrument, data were controlled by an independent computation. We studied also influence of differences in composition of various proteins on the results. According to the results of this Thesis, the most accurate values could be obtained using the internal program E 1%, using the E 1% value from an experiment. On the other hand, the program Protein UV is producing often inaccurate values, strongly infleunced by the protein amino acid composition.

Keywords: protein determination, spectrophotometer NanoVue^{TM} Plus, influence of amino acid composition