

Zn(II) Binding by *Spirulina platensis* Cells at Different Nutrient Loads and Exposure Times (Atomic Absorption Analysis)

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Adsorption (short-term exposure) and accumulation (long-term exposure) of Zn ions from the nutrient by *S.platensis* cells was studied by atomic absorption spectrometry.

Zn adsorption was studied in time interval 0-180 minutes (fig.1). During first 2 minutes of growth *S.platensis* cells adsorbed about 85.5% of zinc content in the nutrient. During following 180 minutes about 2% of the adsorbed zinc was restored into nutrient.

Experiments with long-term cultivation of *S.platensis* during 7 days with different Zn loads (from 0.1mg to 100mg of Zn per liter of nutrient) show that *S.platensis* cells accumulate Zn in amounts considerably less than that of short-term experiments. The amount of the accumulated element depends on the amount of the load (see Fig. 2.) and has time dynamics. Thus, in short-term experiments the amount of the adsorbed zinc is approximately by a factor of 10^3 greater than the amount of zinc accumulated on the 7 day of cultivation.

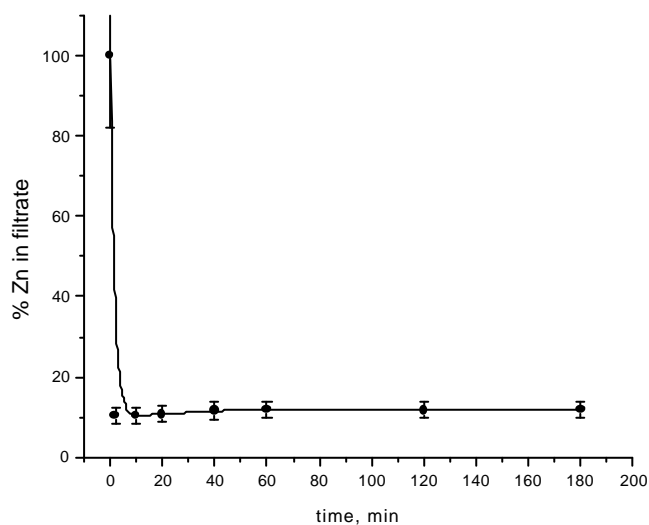


Figure 1

Short-term dynamics of Zn content in *S.platensis* suspension filtrate

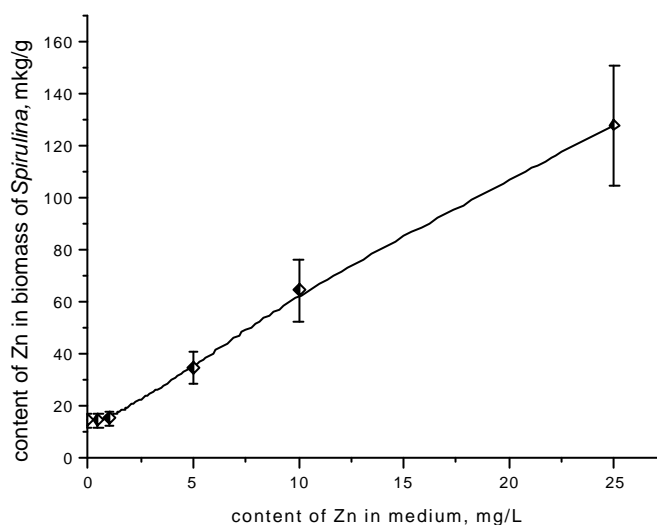


Figure 2.

Dependence of Zn accumulation by *S.platensis* biomass on Zn concentration in the nutrient.