Abstract

This work is a contribution to the use of natural, cost-effective biosorbent in industrial wastewater treatment processes, addressing more particularly the effluents resulting from the tanning industry. A dead mycelial bacterial biomass (i.e. Streptomyces rimosus) collected as waste from an antibiotic production plant was tested as a biosorbent for chromium (III). The results showed that trivalent chromium ion presents a good affinity with respect to the biomass. In batch system, the best performance of chromium (III) was obtained at strongly acidic pH (around 4.8). The sorption kinetics obeyed pseudo-second order model and film diffusion was the main limiting step in the biosorption kinetics. Applying the sips isotherm modelling; the highest biosorption efficiency was over 82 $mg.g^{-1}$