Biosorption of metal ions by Azotobacter vinelandii

Cotoras,

Millar,

Viedma,

Pimentel,

Mestre,

Azotobacter vinelandii was better than either Derxia gummosa or Rhizobium trifolii for sorption of UO2 2+. Its maximum binding capacity was 0.25 mmol UO2 2+/g dry biomass with an affinity constant of 333 l/mmol at pH 4.1 according to the Langmuir model. In a semisynthetic medium, A. vinelandii showed the highest sorption capacity in the early stationary phase. The binding of UO2 2+, Cu2+, Ca2+ and Zn2+ was affected by the pH of the solution. With HCl as eluent, virtually all the sorbed UO2 2+ was released. The presence of Cu2+, Cd2+, Ca2+, and Zn2+ inhibited the UO2 2+ biosorption whereas Mg2+ and K+ had no effect.