Geophysical Research Abstracts, Vol. 7, 08956, 2005 SRef-ID: 1607-7962/gra/EGU05-A-08956 © European Geosciences Union 2005



Reducing adsorption of microbial intracellular enzymes during their extraction from soil

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One of the most important need in soil enzymology, is the evaluation of intracellular enzyme activity. A full characterization of microbial enzymes requires their extraction from soil. Proteins, similarly to many other compounds, commonly undergo adsorption onto soil surfaces, thus limiting the possibility for their extraction. A further, unsolved problem, is proteolysis, because so far the use of inhibitors has not been successful. In this study some preliminary results regarding the reduction of adsorption after cell lysis are presented. Pre-treatment of soil with bovine serum albumin before cell lysis greatly increased the extraction yield of arylsulfatase. This allowed the kinetic characterization of intracellular enzyme in free solution.