Biokhimiya 1996 vol.61 N1, pages 110-118

Secreted hydrolases from streptomycin-resistant strains of Bacillus intermedius

Sharipova M., Balaban N., Nekhotyaeva N., Itskovich E., Shakirov E., Leshchinskaya I., Rudenskaya G.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

Alkaline phosphatase and serine proteinase have been isolated from streptomycin-resistant strains of Bacillus intermedius using ion-exchange, affinity and FPLC chromatography. Substrate blotting analysis and electrophoresis revealed two phosphatase forms with molecular weight of 40 and 50 kDa. The pH and temperature optima of phosphatase were at pH 9.5 and 50°C. The enzyme showed a broad substrate specificity. It was suggested that the two forms of phosphatase are the products of processing, in which serine proteinase is the participant. Two proteinase peaks with molecular weights of 29 and 33 kDa were isolated from B. intermedius S7, the first peak having only 5% of the activity of the second peak. The major peak was identical to serine proteinase described earlier. The minor peak was distinct from the major one by the pH-optima. Analysis of inhibitors' effects revealed that the minor peak also corresponded to serine proteinase.