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Title: Production, purification and characterization of proteases from whey by some fungi

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Abstract:

The results regarding the production of proteases from *Aspergillus niger* and *Aspergillus terreus* revealed that different nitrogen complements induced different growth and enzyme productivity depending on the individual organism, nature of cosupplement and/or concentration. The two steps fermentation process increased the yield of fungal biomass and proteases. Proteases were isolated and purified from *A. niger* and *A. terreus* with specific activity of 179.0 U mg⁻¹ protein, respectively. The purification fold values were 28.9 and 81.9 from the two organisms in the same order. The V_{max} values were 56 and 166 U ml⁻¹ for acid and alkaline proteases from *A. niger*. However, V_{max} for alkaline protease from *A. terreus* was 29 U ml⁻¹. The three proteases expressed the same value of Hill coefficient. Abscisic acid inhibited activities of the three proteases particularly those produced by *A. terreus*, a phenomenon that completely reversed with gibberellic acid (GA3), more permanently with acid protease from *A. niger*. The purified protease was hardly affected with chelating agents and SH-reagents whereas inhibition was dependent on the nature of agent concentration and/or the source of enzyme. Proteases from the tested *Aspergillus* strains exhibited promising hydrolytic activities towards fibrinogen, fibrin and blood clot. Thrombolytic activity varied among organisms and/or substrates.