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Development of analytical procedure for the standardization of bromelain from the pineapple (*Ananas comosus* (L.) Merr.)

Nana Gorgaslidze, Nino Nizharadze, Liana Nadirashvili, George Erkomaishvili and **Malkhaz Getia**
Tbilisi State Medical University, Georgia

In presented work the results of preliminary investigation for standardization of fruit bromelain and stem bromelain are given. Comparative characteristic of some physical-chemical properties of the sample of both species is presented. The effect of cysteine and casein concentration on hydrolysis rate, dependence of casein lysis rate on bromelain concentration and reaction duration is shown. Influence of pH on the activity of both (fruit and stem) of bromelain was studied. Optimal pH value was also established. The dependence on pH is similar in both cases. Optimal value of pH is 7.5 for stem bromelain and 8 for fruit one. Determination of proteolytic activity of bromelain fruit and bromelain stem shows that optimal concentration of cysteine is 0.01-0.02 mole/L (in reaction area with a substrate - 0.004-0.008 mol/l). Further increase of concentration causes the considerable reduction of lysis rate. The speed of casein lysis by bromelain fruit and stem in its concentration 0.5%-2% is unchanged. The rate of casein lysis in both cases is proportional to enzyme concentration within 0.05 g/l-0.25 g/l. The rate of casein lysis is time-proportional in the range 5-20 min. The effect of temperature on the activity of both bromelains (fruit and stem) was studied. It was established that optimal temperature is 55-60°C in both cases. Thus, investigation allows continuing the work in this direction for preparation of corresponding pharmaceutical product.

Biography

Nana Gorgaslidze has completed her PhD from Saint-Petersburg State Chemical-Pharmaceutical Academy. She is the Director of TSMU I Kutateladze Institute of Pharmacochemistry and Professor at the Department of Social and Clinical Pharmacy at Tbilisi State Medical University. She has published more than 80 papers in reputed journals.

nanagorga@yahoo.com

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