

A comparison of enzymatic properties of acid proteinases from different tissues of filarial parasite *Seteria digitata*

Proteinases of parasite are believed to play a significant role in specific functions of their life cycles. Specific inhibition of key parasitic enzymes by chemotherapeutic agents is considered an effective method of controlling filarial infection. In this study, a comparison of acid proteinases from different tissues was done and their enzymatic properties were investigated.

Acid proteinases were extracted from the reproductive and digestive systems, body wall and the whole parasite. Acid proteinases of *S. digitata* were purified by successive chromatographic separations, using DEAE cellulose-52, Sephacryl S-200, Q Sepharose, protein sepharose and Mono-Q, into a single band of SDS -PAGE.

Three kinds of acid proteinases with specific activity of 2.0, 4.4 and 7.5 (u/mg) were isolated from the whole parasite *S. digitata*. DE-bound major and minor proteinases were 2.0, 1.5 and 2.5 respectively, while that of all crude extracts were close to 1.5. The optimum temperature of all purified enzymes and crude extracts were 45 °C and 50 °C respectively. All proteinases were stable at -20 °C and 37 °C produced 25 % and 85 % reduction of activity, respectively. Purified acid proteinases were stable at pH 7.5. The DE- bound proteinases were reduced by about 65% from the initial activity, after 12-hour incubation at pH 8.5. There were no differences in the stability of acid proteinases as determined by SDS - PAGE was 42 KD and 40 KD for DE- bound and unbound proteinases respectively.