PURIFICATION AND PARTIAL CHARACTERIZATION OF FOAM NEST PROTEINS OF *Polypedates cruciger*

Y. A. Haleema

Postgraduate Institute of Science, University of Peradeniya, Peradeniya, Sri Lanka

The blue/green foam nest of *Polypedates cruciger* inherits some unrevealed proteins. It was hypothesized that the innate defense of the bio foam, against environmental threats and microbial attacks was achieved by these proteins. The isolation and the purification of the proteins were accomplished by DEAE-cellulose ion exchange chromatography followed by gel filtration chromatography. The molecular weights of the proteins were approximately 25 kDa and 19 kDa according to SDS-PAGE analysis. Using XRF spectrophotometry the analysis of the blue protein composition revealed the presence of Ni. The expected anti-microbial agents were not found in the protein using disc diffusion test against bacteria and fungi. We have shown that the protein is a potential natural surfactant by a simple experiment. Emulsion formed by the protein is highly stable and persistent through long period of time. This strategy of the protein, safeguard the un attended eggs in the foam, by resisting the unfavorable conditions and attacks. The protein poses a detergent like surfactant activity , yet bio-compatible and does not cause damage to the living material. The attempt taken to utilize the stable color of the protein for dye production was not very successful, but with higher amount of protein ,it would be possible to achieve.