

PARTIAL PURIFICATION AND CHARACTERIZATION BY FLUORIMETRY OF LACTOFERRIN OF GOATS

Introduction: Lactoferrin (Lf) is a salmon red whey protein with a large molecular size of about 80 KDa, being found in milk and to a lesser extent in bile and tears. Lf is a cationic molecule that presents an isoelectric point (pI) around 8.0 to 8.5 having positive charges on its surface being this characteristic of paramount importance so that this protein can exert its biological activities, and can be located in different mammalian species. Lf is known as a multifunctional protein, very important in the innate immunity system, because it can respond in various ways to physiological changes, present in several studies as a preventive and therapeutic treatment, because it presents antimicrobial, antifungal, immunomodulatory, antitumor, antiviral, neutralization of bioactive substances, among others. The work is to purify and characterize lactoferrin from goat's milk, monitoring purification by hydrometry techniques. **Materials and methods:** Skimmed milk was obtained by separating the fat from goat milk by centrifugation and acidified subsequently with HCl 0.1 M to pH 4.1, obtaining the acid serum. The acid serum was neutralized with NaOH 0.1 M up to pH 6.8 and then centrifuged. A 50 mL rate of the supernatant submitted to titration with NaOH 0.1N was removed up to pH 8.0 and 8.3 and centrifuged afterwards. The ultra aliquot of 50 mL was removed and submitted to saline precipitation profiles of 0-20%, 20-40%, 40-60% and 60-80% saturation of $(\text{NH}_4)_2\text{SO}_4$. Fluorimetric analyses of isoelectric points and salt fractions were performed under excitation length conditions at 290 nm and emission wavelengths between 300-550 nm. **Results and discussions:** The isolation profile of Lf by (pI) pH 8.0, pH 8.3 presented the fluorescence spectrum characteristic of lactoferrin (peak at 332 nm), while in the characterization by SDS PAGE 12%, using commercial lactoferrin (SIGMA) as a standard showing an isolation of the caprine Lf with the presence of other proteins. While the saline precipitation profiles of 0-20%, 20-40%, 40-60% and 60-80% saturation of $(\text{NH}_4)_2\text{SO}_4$ also presented the spectrum of fluorescence characteristic of lactoferrin. However, the profile of the precipitate resuspended in 40-60% showed the spectrum of fluorescence extinction characteristic of lactoferrin with higher protein concentration. **Conclusion:** In the present study, it was possible to partially purify caprine lactoferrin by means of isolation using precipitations by isoelectric and saline points with saturation with $(\text{NH}_4)_2\text{SO}_4$ being monitored by hydrometry.