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## Concentration and purification of IgG from sheep colostrum by applying the technique of tangential flow filtration and anion exchange chromatography

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Colostrum is a form of milk produced by the mammary glands of mammals in late pregnancy. It is a complex fluid rich in nutrients characterized by its high concentration of bioactive components like Immunoglobulins (Igs), particularly IgG1, growth factors, i.e. Insulin like Growth Factors-1, Transforming Growth Factor  $\beta$ 2 and Growth Hormones in addition to lactoferrin, lysozyme and lactoperoxidase. Immunoglobulins are the principal agents that protect the gut mucosa against pathogenic microorganisms. The present study was conducted on pooled samples of sheep (Sonadi breed) colostrum from southern Rajasthan, India. Rennet whey of sheep colostrum was used for the concentration of IgG by ultrafiltration and preparation of colostrum whey powder by freeze drying technique. The initial concentration of IgG in pooled sheep colostrum was 4.0 g/100g and after concentrating it 3 times by Tangential Flow Filtration (TFF) technique using 100kDa membrane, its concentration increased to 11.0g/100g. Purification of IgG was carried out using Anion Exchange Chromatography column in Low Pressure Liquid Chromatographic Technique. The IgG purity was confirmed by SDS PAGE in which a single sharp band at 1,25000 Da was obtained. The study revealed that Tangential Flow Filtration technique can be exploited for industrial scale production of bioactive components from colostrum which can be used in the formulation of novel dairy products.