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Isolation and Microbiological Activity of Whey Protein; Field of Application: the Formulation of Topically-Applicable Cosmetic Compositions

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Whey protein is a liquid produced by the processes of the manufacture of milk products, including the cheese industry, a source of health and vitality throughout the ages. However, it has several disadvantages, including that it causes pollution of the environment and groundwater. We will deal with these problems that pose a threat to the environment. Our project aims to reuse the watery by-product of cheese production processes. Whey powder was separated using ordinary cheese production processes, while Whey concentrate was isolated using thermal treatment processes. Each of them was dehydrated at 60º C for two days. The microbiological activities of the Whey protein were studied using agar dilution method on E. coli and Staphylococcus aureus. These solutions of Whey protein with concentrations (10 −2 , 10 −3 ,10 −4 and 10 −5 g extract/ml) in aqueous DMSO were prepared and analyzed for their bacterial growth inhibiting activity. The tested samples in the given concentration range exhibited 90-100% bacterial inhibition. The physiochemical and rheological properties and accelerated stability tests of three cream formulas containing different concentrations of Whey powder as emulsifier (33%, 50 % and 100% w/w) were assessed and compared with commercial cream product containing no Whey powder. All physical and rheological properties of the prepared formulations were found to be the same as the commercial cream product. Stability studies showed a stable homogenous appearance and effective cream during one month of storage at room temperature, 37º C, and at 50º C.

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