

Development of wound healing ointment on the basis of natural biopolymer

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A high molecular (> 1000 KDa) water soluble biopolymer WSCP was obtained from the roots and stems of two Caucasian species of comfrey *S. asperum* and *S. caucasicum*. The biopolymer appeared to have diverse pharmacological activity including anti-inflammatory, antioxidant, anticancer and wound healing. The aim of present study was an attempt to choose optimal carriers and excipients for novel ointment on the basis of biopharmaceutical investigations. Eight compositions with various combinations of carriers and excipients (petroleum jelly, anhydrous lanoline, distilled water, sodium carboxymethylcellulose, polyethylene glycol -1000, glycerin, sodium alginate, askana clay, and Tween-80) were designed and studied for: Determination of optimal ointment base, establishment of ointment stability, and biopharmaceutical study. Stability of ointment was evaluated using centrifugation (6000 rpm for 5 min) and thermal assays. Compositions 1, 2, 3 and 6 passed the test, whereas in compositions 4, 5, 7 and 8 the stability was slightly affected by centrifugation. The biopharmaceutical study was carried out by using the agar diffusion assay. Based on the obtained results the optimal ointment formulation has been justified and formulated WSCP is with the combination from *S. asperum*, distilled water, and sodium alginate. Biopharmaceutical studies established that the maximal release of WSCP from the ointment was achieved when sodium alginate was used as ointment base.

Biography

Sopio Gokadze has graduated from Tbilisi State Medical University (TSMU). She has obtained her MS degree in Pharmacy in 2012. She worked at Scientific Research and Practical Skills Laboratory. Currently, she is a PhD Student at TSMU Department of Pharmaceutical Technology. She is also a co-author of 5 scientific publications and 3 presentations at international conferences.

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