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The pharmacological potency of plant polymers in the prevention/treatment of peptic gastric ulcer

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Peptic gastric ulcer (PGU) is one of the most common, chronic gastrointestinal disorder affecting a large number of people worldwide. Modern remedies such as PPIs, H₂ and M1 blockers, mucosal protectors and antacids, despite undoubted efficacy, exhibit adverse effects, especially when used chronically. Therefore, the finding of new medicines with less adverse events is still needed and one possibility is coming from natural materials, that usually are claimed to have no or minor side effects and hence are considered as a good in such cases when drugs are to be used for a long time (e.g. to diminish gastrotoxicity of chronically consumed NSAIDs). Amongst gastroprotective Vegetal-derived polymers, polysaccharides of different origin are of special interest. During the study of chemical composition of comfrey species widespread in Georgia an unusual caffeic acid-derived polymer, namely poly[oxy-1-carboxy-2-(3,4-dihydroxyphenyl)ethylene] (POCDE) was identified for the first time in high-molecular water-soluble polysaccharide fractions of these plants. Comparative investigation of previously mentioned fractions and POCDE from comfrey in experimental ethanol-induced ulcer model revealed ulcer preventing activity without any adverse toxic effects. It should be emphasized, that we did not study anti-*Helicobacter pylori* efficacy of named compounds as the study was focused on prevention of gastric (and not duodenal) ulcers that may arise in particular groups of risk. Hence, the proposed investigation represents an attempt to broaden the spectrum of safe and PGU preventive herbal drugs and to contribute the herbal approach in the search for new compositions for PGU prevention.

Biography

Karen G Mulkijanyan is the Head of the Department of Preclinical Pharmacological Research at Tbilisi State Medical University I. Kutateladze Institute of Pharmacology and full Professor at the Caucasus International University Faculty of Medicine. He holds MS in Biochemistry and PhD in Pharmacy. His research interests cover pharmacology of anti-inflammatory, ulcer preventive, burn and wound healing drugs; analysis of structure-activity relationship and prediction of bioactivity of chemical compounds; intellectual property protection; technology transfer/commercialization, use, and care of laboratory animals. He was a manager/key investigator of research projects funded by CRDF Global/GRDF, STCU, GNSF/SRSNF. As Organizing Committee Member, he arranged several international events on pharmacology and pharmacy. He co-authored 120+ scientific publications, 2 patents, 30 presentations at international scientific meetings. He is a Founder and President of the Georgian Association for Laboratory Animal Science, a member of the Association of Professional Chemists of Georgia and Association of University Technology Managers.

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