

CLINICAL NUTRITION

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Protective effect of fish collagen extracted from airbladder of striped cat fish (*Pangasius hypophthalmus*) against ethanol-HCl induced peptic ulcer in experimental rats

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Gastric ulcer is amongst the most common health issues of global concern and its etiology is due to an imbalance between aggressive and protective factors of the gastric mucosa. Medications commonly used to treat gastric diseases such as antacids and steroids have drastic side effects and often serve to exacerbate the problem. Collagen peptides and hydrolysates are great, natural alternatives to these medications and rather than simply masking symptoms, collagen have the power to prevent and even heal many digestive disorders. In our laboratory an efficient method has been developed for the extraction of high pure acid soluble collagen (ASC) from the airbladder of the fish *P. hypophthalmus*. The protein content in the purified extract was found to be around 97.8 g protein/100 g extract. The purity of the collagen extract was investigated with amino acid composition and SDS-PAGE profile of standard collagen. A preliminary evaluation on its protective effect against ethanol-HCl induced peptic ulcer in Wistar rats carried out indicated that oral administration of fish collagen (20 mg/kg body weight) for two weeks along with the diet is capable of partially neutralizing ethanol-HCl mediated gastric mucosal lesions. Histopathological evaluation of gastric lesions also confirmed the normal architecture of gastric mucosal layer as compared to that of control group. Significant infiltrations of inflammatory cells and denuded mucosal layer were seen in ulcer induced group. In ulcer induced collagen treated group, partial resistance to denudation of the mucosal layer was observed, which implies collagen supplementation can be an effective therapeutic alternative that provides protective effect against acid induced gastric injury.

Biography

Sreerekha P R has completed her PhD in Nano-Biotechnology from Amrita Viswa Vidyapeetham University, India and currently working as Postdoctoral Research Associate at Biochemistry and Nutrition Division of ICAR-Central Institute of Fisheries Technology, India. She has more than 12 years of research experience and her current research interests involves identification of marine biomolecules for nutraceutical and cosmeceutical applications, micro/nano-encapsulation of biomolecules for nutraceutical applications and biomodulation of marine biopolymers for application in nutritional and healthcare products. She has more than 15 publications in peer-reviewed reputed international journals and participated and presented research work in national and international conferences.

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