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Physicochemical and biochemical properties of pepsin-solubilized collagen isolated from the integument of sea cucumber (*Stichopus vastus*) (Article)

Abedin, M.Z.^{ab}, Karim, A.A.^a , Latiff, A.A.^c, Gan, C.-Y.^d, Che Ghazali, F.^e, Zzaman, W.^a, Hossain, M.M.^e, Ahmed, F.^f, Absar, N.^b, Sarker, M.Z.I.^g 

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Abstract

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The integument (high collagen content) of sea cucumber *Stichopus vastus* is generally wasted after harvesting, whereas only its stomach and intestines are eaten in few Asian countries. Amino acid composition, thermal transition temperature (T_m), zeta potential, solubility, moisture absorption and retention capacities, proximate composition and morphology of pepsin-solubilized collagen (PSC) isolated from the integument of *S.vastus* were studied. Amino acid composition revealed that glycine was dominant in the isolated collagen. PSC was found to have an isoelectric pH of 4.67, good moisture absorption and retention capacity at higher humidity, a sharp effect of pH and NaCl concentration on solubility, and an inverse relationship between temperature and viscosity. PSC also showed the maximum T_m to be 37.3C, very high protein content and ultrastructural characteristics. Hence, the PSC has the potential to be used as a functional ingredient in food, cosmetics and nutraceutical products. © 2013 Wiley Periodicals, Inc.

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