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Purification, optimization and physicochemical properties of collagen from soft-shelled turtle calipash**Caiyan Li, Ya'nan Yang, Wei Song, Wei Wang and Guoying Qian**
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The present work was to optimize the purification conditions for soft-shelled turtle (*Pelodiscus sinensis*) calipash collagen (STCC) isolated by pepsin and to explore collagen physicochemical properties for potential biomaterial applications. Single-factor test and orthogonal method L₉ (3⁴) were employed with the STCC recovery yield as indicator. The optimum purification conditions were obtained when NaCl concentration, collagen concentration and purification time were 2 M, 8 g/L, and 24 h, respectively. Purified STCC were characterized by SDS-PAGE, UV scanning, FTIR, solubility, thermal behavior and amino acid analysis. The results showed that STCC contained high hydroxyproline content than that of other fishery skins, belonging to typical type I collagen in form of [α1(I)] 2α2(I). FTIR spectra of STCC were quite similar to other aquatic animals' collagens. It has the lowest solubility at pH 6, and when NaCl concentration decreased from 2% to 6% (w/v), solubility dropped. The denaturation temperature (T_d) and melting temperature (T_m) were 35.1°C and 105.14°C, respectively. Morphology of STCC depicted as regular and porous network structure by SEM. In general, the results suggested that turtle calipash can be exploited as alternatives to mammalian collagen and could also be used for biomedical applications as a potential new material.

Biography

Research interest is to investigate the functional active substance and nutritional quality formation in aquatic animals, with emphasis on protein/bioactive peptide preparation in Chinese soft-shelled turtles.

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