

Extraction and characterization of collagens from muscle and skin of bullfrog, *Rana catesbeiana* Shaw

Zhong-Ji Qian, Jae-Young Je, Won-Kyo Jung and Se-Kwon Kim

Department of Chemistry, Pukyong National University, Busan 608-737, Korea

TEL: +82-51-620-6375, FAX: +82-51-628-8147

Abstract

Collagen is the most abundant structural protein in the vertebrate organism. Comprising 30% of the total protein content and about 70% of the dry weight of the dermis. It is the major constituent of skin, tendons, ligaments, bone, cartilage and fascia, and together with other components such as elastin, proteoglycans, and glycoproteins comprises what is termed the extracellular matrix. In this study, we prepared collagens from skin and muscle of bullfrog, *Rana catesbeiana* Shaw, by means of acid and enzymatic methods¹⁾. The yields of acid-soluble collagens from skin and muscle was 7.25% and 3.66%, respectively. On the other hand, pepsin-solubilized collagens were extracted from insoluble portions of 0.5 M acetic acid by 10% pepsin (w/v), the yields were 18.21% and 8.52%, respectively. Detailed investigations on various physicochemical properties, such as molecular weight on SDS-PAGE(sodium dodecyl sulfate-polyacrylamide gel electrophoresis²⁾, amino acid composition, denaturation temperature were carried out. To separate collagens subunits ion exchange was carried out in a cellulose column and further SDS-PAGE also used for the separation of collagens chains.

References

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