

Collagen from Diamondback Squid (*Thysanoteuthis rhombus*) Outer Skin

Takeshi Nagai

Department of Food Science and Technology, National Fisheries University, Yamaguchi 7596595, Japan. Fax: +81-832-33-1816. E-mail: machin@fish-u.ac.jp

Z. Naturforsch. **59c**, 271–275 (2004); received October 20/November 10, 2003

Collagens (acid-solubilized and pepsin-solubilized collagens) were prepared from diamondback squid outer skin and partially characterized. The yields of acid-solubilized and pepsin-solubilized collagens were about 1.3 and 35.6%, respectively, on a dry weight basis. Pepsin-solubilized collagen was heterotrimer with a chain composition of $\alpha1\alpha2\alpha3$. The patterns of peptide fragments were different from that of porcine skin collagen. Denaturation temperature was 27.5 °C, about 10 °C lower than that of porcine collagen. The amino acid composition of pepsin-solubilized collagen from diamondback squid outer skin was similar to that from cuttlefish outer skin. This squid is big among squid species, and its skin is thick. It is clear that diamondback squid outer skin has a potential as an alternative source of collagen to bovine skin and bone. At present, collagen using aquatic materials such as skin (cod and a deep-sea fish) and scale (sea bream and anchovy) is the development stage in the related industries. Unless the problem of BSE infection in land animals is resolved aquatic materials as an alternative source of collagen will attract much attention in the cosmetic and medical fields.

Key words: Collagen, Diamondback Squid, Alternative Source of Mammalian Collagen