

Practical applications for production of cosmetic materials from animal proteins by employing microbial enzymes that specifically degrade animal extracellular matrix proteins

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Among those hard-to-degrade animal proteins, the most major proteins are extracellular matrix proteins (EMPs) and collagen is one of the representative components. Subsequently to EMPs, a large amount of keratins are also generated mainly from the poultry processing factories and leather industry. We have studied for collagen and keratin degradation by thermophilic bacteria. In this project, we investigated the possibilities of producing cosmetic materials by use of thermophilic bacteria we isolated and their enzymes as a practical approach. The main issues we challenged are (i) preparation of EMPs in lower molecular weight with collagenolytic enzymes, (ii) preparation of keratin fragments from poultry feathers with a thermophilic bacterium, and (iii) investigation of bioactivity for keratin fragments prepared.