

Keratin: An Introduction

Swati Sharma, Arun Gupta and Ashok Kumar

Faculty of Chemical Engineering and Natural Resources,
Universiti Malaysia Pahang, 26300 Gambang, Kuantan, Malaysia

Department of Biotechnology and Bioinformatics,
Jaypee University of Information Technology, Waknaghat, Solan 173234,
Himachal Pradesh, India ashok.nadda09@gmail.com

Abstract:

What is keratin? And why to use the keratin? Well known that protein is a part of every cell in living organism's body which plays many different roles to keep living things alive and healthy. The importance of protein for the growth and repair of muscles, bones, skin, tendons, ligaments, hair, eyes, and other tissues is proven since a very long time. Proteins also exist in the form of enzymes and hormones needed for metabolism, digestion, and other important processes. Natural proteins are purified from natural sources. Keratin is among the most copious proteins found associated with the body of reptiles, birds, and mammals. It is a structural constituent of nail, wool, feathers, and hoofs which offers strength to body and muscles. Nowadays, the keratin-rich waste biomass produced from poultry and meat industry imposes serious threat to environment and living beings. We need to explore various techniques and methods for the extractions and use of keratin from waste biomass. From the industrial point of view, keratin is a useful product in the medical, pharmaceutical, cosmetic, and biotechnological industries. Materials obtained from keratin may be converted into porous foam of different sponges, shapes, coatings, mats, microfibers, gels, and materials of high molecular weight. In this chapter, we briefly describe the various sources, properties, and structures of keratin.

Keywords: Protein; Waste; Biomass; Medical; Pharmaceutical; Application Extraction