

D25

Physical and Structural Characteristics of Silk Fibroin/Hyaluronic acid Blend

HaeYong Kweon¹, Kwang-Gill Lee¹, Joo-Hong Yeo¹, SoonOk Woo¹, SangMi Han¹, Jang Hern Lee², Tae Won Ham², Young Hwan Park³ and Chang Seok Ki³

¹Department of Agricultural Biology, NIAST, RDA Suwon 441-100, Korea

²College of Veterinary Medicine Seoul National University and ³School of Biological Resources and Materials Seoul National University.

Silk fibroin (SF), produced by silkworm *Bombyx mori*, is one of typical natural protein polymers. Over the centuries, SF has been used as highly valuable textile fibers due to its qualities of strength, elasticity, softness, and absorbency. Biomedical applications of silk protein including surgical suture are also one of traditional uses of silk fibroin for a long time due to its good physicochemical properties and relatively inert immune response. Recently, biomedical and pharmaceutical applications of SF has been intensively studied through blend technique with biocompatible polymer. Hyaluronic acid, one of natural polysaccharides, is considered as one of powerful biomaterials due to its biological compatibility. Hyaluronic acid has been studied as vehicles for drug, wound dressings, and so on.

In this study, silk fibroin/hyaluronic acid blend was prepared with various composition ratio. The structural characteristics of silk fibroin blend were examined using analytical instruments including SEM, XRD, DSC, and so on.