

A9

Molecular cloning and characterization of the fibroin light chain gene from *Bombyx mori*, Baekok-Jam

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Fibroin of the silkworm, *Bombyx mori*, is secreted from the posterior silk gland cells as a molecular complex consisting of the heavy chain (H-chain; about 350kDa), the light chain (L-chain; 26kDa) and P25 (about 30kDa). Fibroin H- and L- chains are linked by a disulfide bond and its disulfide linkage is essential for the efficient secretion of silk fibroin. In order to understand molecular events during silk synthesis and provides genetic resources for molecular breeding, here, we have cloned and characterized the fibroin L-chain gene from *Bombyx mori*, Baekok-Jam. Its about 14,650 nucleotides long with an open reading frame of 786 nucleotides that encodes a protein of 262 amino acids with a molecular mass of approximately 26,000 dalton. The Baekok-Jam fibroin L-chain gene was 98.9% identical to the amino acid level of J139 strain, Japanese breed, and was different from amino acid sequence at 3 positions, 46, 80 and 123 in J139. The Northern hybridization analysis showed that the Baekok-Jam fibroin L-chain gene was specifically expressed in the posterior silk gland.