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Antheraea mylitta cocoonase: A boon in silk industry

Dev Mani Pandey¹, Sneha Prasad¹, Priya Porwal¹, Ajit Kumar Sinha² and Jay Prakash Pandey²¹Birla Institute of Technology, India²Central Tasar Research and Training Institute, India

Sericulture, both an art and a science of raising silkworms for silk production, has better prospects in developing countries as silk production is highly economical. Silkworm species vary in terms of the quality of silk they produce and the food plants they consume. Wild silkworms include tasar silkworm, eri-silkworm, oak-tasar silkworm and muga silkworm. The Indian tasar silkworm, *Antheraea mylitta* is a natural fauna of tropical India, represented by 44 ecotypes. Wide distribution and polyphagy of this insect species has resulted in extensive variation in the population. Tasar cocoons are reported to be largest among all the silk-producing insects in the world. Cocoon, shelter for larva development to silk moth, contains fibrous protein, fibroin and is coated by the globular protein, sericin. The escape of the silk moth from cocoon requires the action of cocoonase enzyme secreted by the pupa. Cocoonase is a protease enzyme which hydrolyses sericin, soften cocoon and later they escape out. Seeking this vital function, the study focuses on the production of active recombinant *Antheraea mylitta* cocoonase and its post translation modification (PTM). PTM can significantly modulate the integral properties of protein affecting its stability, interaction and providing proper folding. Several PTMs such as phosphorylation, SUMOylation, myristoylation and glycosylation are being checked. Obtained detailed findings will be discussed

Biography

Dev Mani Pandey is interested in the research areas and scientific expertise includes: molecular biology, functional genomics, stress physiology and bioinformatics approaches on plants like rice, groundnut, medicinal plants etc., using recent biotechnological tools. He is also associated with Central Tasar Research and Training Institute, Ranchi, India for sericulture related research. He is also actively involved in research, teaching and other department and institute activities.

dmpandey@bitmesra.ac.in

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