



DIVERSITY AND FUNCTIONAL ROLE OF GUT MICROBIOTA OF SILKWORM, *BOMBYX MORI* L.

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ABSTRACT

Gut microbiota plays an important role in host nutrition and immunity against pathogenic organisms in most of the vertebrates and in some species of invertebrates by adopting different mechanisms. However, relatively less information is available about the diversity, ecology and function of gut microbiota of the mulberry silkworm, *Bombyx mori* L. The physiological activity of silkworm is often reflected by its genetic constitution, microbes present in the gut, nutritional (quality of mulberry leaves) and environmental factors. Recent studies have also demonstrated that silkworm gut microbes could synthesize and produce extracellular enzymes, vitamins, metabolites, antimicrobial substances and antioxidants, which help in digestion and absorption of nutrients inhibiting colonization of pathogenic micro-organisms and stimulating host immune response. With the advancement in meta-genomic approaches to identify novel microbial species, focus on *Bombyx mori* L., gut microbiome using such tools would help to develop innovative strategies for boosting silkworm growth, development, defense mechanism and thus improving silk production and quality. In addition to improving silk productivity and immune response, identification of indigenous probiotics and their transfer into silkworm gut would help in the syngenical development of climate resilient breeds with improved silk productivity.

Key words: *Bombyx mori* L., gut microbiota, metagenomics, probiotics, silkworm.