

## International Conference on **Transcriptomics**

July 27-29, 2015 Orlando, USA

## Identification of novel splicing form of Decapentaplegic (Dpp) gene in Bombyx mandarina

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Decapentaplegic (Dpp) is the homolog of vertebrate BMP-2 and BMP-4 and functionally interchangeable BMPs. The *Bombyx mori* (B. mori) and *Bombyx mandarina* (B. mandarina) Dpp genes share genetic homology with human BMPs and Drosophila Dpp, but few studies have been executed to examine the functions of *B. mori* and *B. mandarina* Dpp and its function is not well understood. To date, there was also no reported splicing form of Dpp in silkworm. In this study, we investigated Dpp expression using synthesized cDNA from midgut tissue of *B. mandarina* by RT-PCR. Interestingly, lower band was discovered with band of full-length Dppc DNA and it was identified as novel splicing form that a part (333 bp) of *B. mandarina* Dpp was deleted through DNA sequencing analysis. In addition, we found that the delated part in the variant was a portion of proprotein region compared to human BMP-2 and 7 candidate single nucleotide variants (SNVs) were able to affect formation of novel splicing form using variant calling analysis. To the best of our knowledge, this is the first approach to address the novel splicing form of Dpp in *B. mandarina* was degenerated in evolution process toward more advanced and domesticated *B. mori*.

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