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The copper, zinc-superoxide dismutase gene (Cu,Zn-SOD) of *Bombyx mori* ; cDNA sequence and expression the gene

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Cu, Zn superoxide dismutase (SOD) is one of the cytoplasmic enzymes involved in cell detoxification from reactive oxygen species. The complete cDNA sequence of a fly analog of the *Bombyx* Cu/Zn SOD gene (BmCu/Zn SOD) was obtained by microarray of *Bombyx mori* embryo cDNA library. The predicted amino acid sequence shows 77% identity with the *Musca domestica* (house fly). The deduced polypeptide consists of 155aa with a predicted molecular weight of 33,894. The essential physiological role of SOD and the high enzymatic activity of the protein, SOD is useful in phylogenetic studies. To assess these relationships we have determined the phylogenetic tree of the SOD coding region in 10 species belonging to *melanogaster* subgroup and 2 species of Hymenoptera. Northern blot hybridization shows transcripts of 0.9kb throughout all early embryo developmental stage. The BmCu/Zn SOD is ubiquitously expressed in the various stage throughout the final larva stage, pre-pupa, pupa, egg and adult. But, BmCu/Zn SOD is weakly or isn't expressed in the hemocyte in the larva stage, fatbody, midgut and silk gland in the pre-pupa stage, fatbody and testis in the pupa stage and male of adult stage. We report the sequencing of the BmCu/Zn SOD gene of the silkworm, *Bombyx mori* during embryogenesis and the role of Cu/Zn SOD in defense against dioxygen toxicity is discussed in the light of these findings.