Phylogenetic Relationship of *Bombyx mori* Protein Disulfide Isomerase

Tae Won Goo\textsuperscript{a}, Eun Young Yun\textsuperscript{a}, Jae-Sam Hwang\textsuperscript{a}, Seok-Woo Kang\textsuperscript{a}, Kwan-Hee You\textsuperscript{b} and O-Yu Kwon\textsuperscript{c,*}

\textsuperscript{a} Department of Sericulture and Entomology, National Institute of Agricultural Science and Technology, RDA, Suwon 441–100, Korea

\textsuperscript{b} Department of Biology, College of Natural Sciences, Chungnam National University, Taejon 305–764, Korea

\textsuperscript{c} Department of Anatomy, College of Medicine, Chungnam National University, Taejon 301–747, Korea. Fax: 82-42-586-4800. E-mail: oykwon@cnu.ac.kr

* Author for correspondence and reprint requests

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Protein Disulfide Isomerase, *Bombyx mori*

A cDNA that encodes protein disulfide isomerase was isolated from *Bombyx mori* (bPDI), in which an open reading frame of 494 amino acids contained two PDI-typical thioredoxin active sites of WCGHCK and an ER retention signal of the KDEL motif at its C-terminal. The bPDI protein shared less than 55% of the amino acid sequence homology with other reported PDIs. bPDI is most genetically similar to the *D. melanogaster* PDI. The most serious evolutionary diversity was observed between the metazoa and nematoda through PDI evolutionary processing. Although bPDI shows a relatively low amino acid homology with other PDIs, in which both sites of the two thioredoxin active sites and the endoplasmic reticulum (ER) retention signal are completely conserved, it was successfully recognized by anti-rat PDI antibodies. This suggests that bPDI may have the activity of a protein isomerase and a chaperone.