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Molecular Genetic Relationship of *Bombyx mori* Protein Disulfide Isomerase (bPDI)

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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 evolutional diversity was observed between the metazoa and nematoda through PDI evolutional 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.