



Sequence variation and molecular evolution of *BMP4* genes

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ABSTRACT. Bone morphogenetic protein 4 (*BMP4*) regulates skeletogenesis, osteoblastic differentiation, and the induction of hair follicles. Its protein-coding region contains a signal peptide, prodomain (which regulates post-translational synthesis), and a mature domain (which mediates gene function). Previous studies considered this gene to be conserved. By reanalyzing the coding region of *BMP4* in 16 mammalian species, we found that the mature domain is conserved in mammals. A comparison of the putative amino acid sequence demonstrates that *BMP4* is relatively conserved. Two domains in *BMP4* are connected by a random coil. The protein conformation differs between the Muridae family and other species, which might be associated with the body type of the former group.

Key words: *BMP4*; Mature domain region; Evolution