



# Expression of recombinant myostatin propeptide pPIC9K-Msp plasmid in *Pichia pastoris*

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**ABSTRACT.** Myostatin propeptide can inhibit the biological activity of myostatin protein and promote muscle growth. To express myostatin propeptide *in vitro* with a higher biological activity, we performed codon optimization on the sheep myostatin propeptide gene sequence, and mutated aspartic acid-76 to alanine based on the codon usage bias of *Pichia pastoris* and the enhanced biological activity of myostatin propeptide mutant. Modified myostatin propeptide gene was cloned into the pPIC9K plasmid to form the recombinant plasmid pPIC9K-Msp. Recombinant plasmid pPIC9K-Msp was transformed into *Pichia pastoris* GS115 by electrotransformation. Transformed cells were screened, and methanol was used to induce expression. SDS-PAGE and western blotting were used to verify the successful expression of myostatin propeptide with biological activity in *Pichia pastoris*, providing the basis for characterization of this protein.

**Key words:** Myostatin propeptide; Recombinant plasmid; Biological activity