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Cloning and transformation analysis of isoflavone synthase gene into Minshan *Trifolium pratense*

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ABSTRACT. The aim of this study was to clone the isoflavone synthase (IFS) gene and establish the recombinant Minshan *Trifolium pratense.* The IFS gene was cloned from the callus of Minshan *T. pratense* using reverse transcription-polymerase chain reaction. The plant expression vector pRI101-AN-IFS was constructed and introduced into *Agrobacterium tumefaciens* strain LBA4404, and then screened under cephalosporin. IFS expression was detected by reverse transcription-polymerase chain reaction. The IFS gene was cloned successfully. Sequence analysis indicated that IFS gene had high homology with similar genes from other plants. The IFS-overexpressing callus was obtained by introducing the LBA4404-harboring IFS-pRI101-AN-IFS vector into *T. pratense* calluses.

Key words: Gene cloning; Isoflavone synthase; Sequence analysis; Callus; *Trifolium pretense*

