

# Genetic Stability, Active Constituent, and Pharmacocoactivity of *Salvia miltiorrhiza* Hairy Roots and Wild Plant

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*Salvia miltiorrhiza* is an annual plant growing in China, Mongolia, Korea and some other Asian countries. The extract from *S. miltiorrhiza* roots has been used for supporting healthy cardiovascular and circulatory systems during the last decade. The active constituents of *S. miltiorrhiza* from different areas vary significantly, and the wild resources are overexploited. To adapt the demand for active constituents of *S. miltiorrhiza* against cardiovascular-related diseases, alternative materials need to be developed. The aim of the present work was to investigate the possibility of *S. miltiorrhiza* hairy roots as the alternative materials. The results showed that *S. miltiorrhiza* hairy roots are genetically stable. The contents of salvianolic acid B and tanshinone IIA, two main active constituents in hairy roots, determined by the assessment of combining flow cytometry and phytochemical analysis, are comparable to or significantly lower than in wild plant roots. The extract from *S. miltiorrhiza* hairy roots also had similar protection activity for hypoxia and reoxygenation injury in rat cardiac myocytes like that from wild plant roots. *S. miltiorrhiza* hairy roots may be alternative materials to obtain the drug or healthy food for cardiovascular-related diseases.

**Key words:** *Salvia miltiorrhiza*, Hairy Roots, Genetic Stability, Pharmacocoactivity