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Czech J. Genet. Plant Breed.

**Huang J., van der Krol
S., Bouwmeester H.,
Liu Z.:**

**An improved
Agrobacterium
tumefaciens mediated
transformation of
Artemisia annua L. by
using stem internodes
as explants**

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123-129

Transformation of *Artemisia annua*, which produces the sesquiterpenoid endoperoxide artemisinin widely used for the treatment of malaria, has been hampered by the low efficiency of adventitious shoot and root formation on a selective medium containing additional compounds for *Agrobacterium* decontamination. Here we identified

of importance for optimization of *Artemisia annua* transformation. Results indicated that stem internodes showed better resistance capacity to *Agrobacterium decontaminator* than leaves did. *Agrobacterium tumefaciens* with an optical density (OD) value of 0.2– 0.5 plus 100 µmol of acetosyringone per litre of solution gave the best transformation efficiency. Moreover, kanamycin at 30 mg/l in the culture medium was effective in suppressing the growth of non-transformed tissue. Furthermore, transgenic shoots required an early induction of rooting. In addition, dimethyl sulphoxide considerably improved the rooting of shoots. The present work provides rapid and reproducible transformation and regeneration of *A. annua*.

Keywords:

anti-malaria; artemisinin; stem internode; traditional Chinese medicine; transgene

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Sciences

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