

Effect of methyl jasmonate on production of ariltetralin lignans in hairy root cultures of *Linum tauricum*

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ABSTRACT

Methyl jasmonate (MeJA) treatment increases the levels of plant secondary metabolites, including ariltetraline lignans, which are considered to be the main active compounds in *Linum tauricum*. This study was concentrated on the induction of production of ariltetralin lignans in hairy roots cultures of *L. tauricum*, transformed by *Agrobacterium rhizogenes*, ATCC 15834 by exposing them to different concentrations (50-200 microM) of methyl jasmonate (MeJA) during the culture period. The content of 4'-demethyl-6-methoxypodo-phyllotoxin (4'-DM- 6MPTOX) and 6-methoxypodophyllotoxin (MPTOX), the main constituents in hairy roots of *L. tauricum* increased about 1.2 folds by elicitation of MeJA, however, the fresh weight, dry weight and growth ratio was inhibited by increasing MeJA concentrations. The highest total lignans yield was obtained with 150 microM MeJA treatment. These results suggest that MeJA elicitation is beneficial for lignan accumulation in the hairy roots cultures of *L. tauricum*.

KEYWORDS

Lignans . *Linum tauricum* . hairy roots . Methyl jasmonate

REFERENCES

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