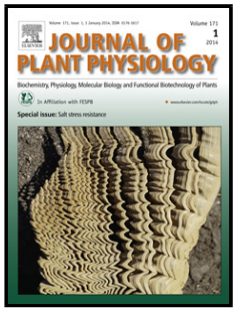

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Plant growth regulator interactions in physiological processes for controlling plant regeneration and *in vitro* development of *Tulbaghia simmleri*

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ABSTRACT

The endogenous auxin and cytokinin contents of *in vitro* regenerated *Tulbaghia simmleri* maintained on applied plant growth regulators in Murashige and Skoog (MS) medium were investigated using UHPLC-MS analysis. The highest number of shoots (27.6 per leaf) were produced in MS medium supplemented with 2.5 µM thidiazuron. A higher number of these shoots were rooted with 10 µM 6-(2-hydroxy-3-methylbenzylamino) purine (PI-55, cytokinin antagonist). Production of somatic embryos (SEs: 16.4 – 4.6, globular to cotyledonary stages) improved significantly with liquid MS medium containing 2.5 µM picloram, 2.5 µM phloroglucinol (PG) and 1.5 µM gibberellic acid or 1.5 µM PI-55 and 1.0 µM *trans*-zeatin. SEs (torpedo and cotyledonary stages) germinated (100%) in plant growth regulator free MS