
ABSTRACT

The objective of the study was to evaluate the efficacy of Thidiazuron (TDZ) as a plant growth regulator in evoking morphogenesis, whole plant regeneration and subsequent rooting and bulbing from shoot tip cultures of Ornithogalum saundersiae L. Shoot tip explants maintained on MSO (basal medium devoid of any plant growth regulators), formed only one shoot over the 10-week period of culture, which also failed to root or form bulbs. Inclusion of TDZ at various concentrations (0.1-5.0 µM) promoted direct adventitious shoot proliferation. Most of the shoots subsequently formed roots and bulbs when transferred to MSO. Addition of naphthalene acetic acid (NAA) to the culture medium inhibited shoot formation causing the shoot tip explants to brown and die after about 7 days of culture without further growth, development or callus formation. Benzylaminopurine (BAP), on the other hand, slightly improved shoot formation above the controls, although subsequent rooting and bulbing were low. Of significance was the synergistic effect of BAP and NAA which, in combination, improved shoot proliferation, as well as subsequent root and bulb formation from the shoot tip explants to levels comparable to those of explants cultured in TDZ at 0.1-0.4 µM concentration range. In summary, TDZ at 5 µM concentration was more effective, but at lower concentrations (0.1-1.0 µM) was just as effective as combined NAA + BAP, in eliciting morphogenic responses from shoot tip explants of Ornithogalum saundersiae L.