

## The Effects of Different Auxin on the Total Antioxidant Capacity and Phenolic Contents of *Hypericum retusum* Aucher raised under *in vitro* Conditions

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**Aim of the study:** Use of *Hypericum* species have increased in the past few years due to the antidepressant and antiviral activities found in extracts of those plants. After seed sterilisation and germination, shoot proliferations were performed. The highest number of shoots was obtained on medium supplemented with 0.5 mg l<sup>-1</sup> BAP. The study was aimed to evaluate the effects of auxins on antioxidant potential and phenolic contents of methanolic extract of *Hypericum retusum* Aucher (Clusiaceae) plantlets grown under *in vitro* conditions.

**Material and Methods:** The seed germination and sterilisation procedures were performed as described in our previous study. Following germination, micro-shoots (0.5–1.0 cm length) were separately transferred to Murashige & Skoog medium supplemented with 0.5 mg l<sup>-1</sup> N-6-benzylaminopurine (BAP)<sup>13</sup>. According to the results of our previous experiments, the media with BAP (0.5 mg l<sup>-1</sup>) were separately supplemented with various auxins (0.25 mg L<sup>-1</sup> IAA, NAA, IBA) for shoot proliferation<sup>12</sup>. All media were supplemented with 30 g l<sup>-1</sup> sucrose and solidified with agar (5.5 g l<sup>-1</sup>, Agar-Agar (Sigma)). They were adjusted to the pH 5.8 prior to autoclaving (120°C for 20 min). The *in vitro* cultures were maintained at 25 ± 2°C for a 16 h photo period (40 μmol m<sup>-2</sup> s<sup>-1</sup>) provided by mercury fluorescent lamps. All experiments were means of 16 replicates, and the experiments were repeated two times. The free radical scavenging effects of the methanol extracts were estimated according to the method of Blois (1958) with minor modifications<sup>1</sup>. The concentration of total phenolics of methanol extracts were determined by using Folin-Ciocalteu reagent and external calibration with gallic acid<sup>15</sup>

**Results:** The antioxidant capacities of the extracts obtained from *H. retusum* Aucher were determined using the DPPH test method. The highest total antioxidant capacity and phenolic contents were observed with auxins. The methanol extracts of plantlets grown *in vitro* conditions showed the strongest free radical scavenging capacities at concentrations of 100 and 150 μg/ml.

**Keywords:** *Hypericum retusum* Aucher, auxins, antioxidant, phenolic.