Wpływ cytokinin na odpowiedź morfogenetyczną eksplantatów pochodzących z siewek *Polemonium coeruleum*

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The effect of cytokinins on morphogenetic response of *Polemonium coeruleum* seedlings explants

Summary

The aim of the presented research was to examine the morphogenetic response of *Polemonium coeruleum* explants. The donor material were 10-day-old seedlings. Surface sterilized seeds were germinated on MS medium supplemented with GA_3 (1 mg·dm^{-3}). Seedling explants (shoot tips, fragments of cotyledons, hipocotyls and roots) were isolated and transferred onto solidified MS medium supplemented with different types of cytokinins (BA, KN, ZEA, 2iP) at concentrations 1.0, 3.0 and 5.0 mg·dm^{-3} in combination with NAA (0.1 mg·dm^{-3}).

All explant types were characterized by callus proliferation. It was observed that calli developed on the entire surface of hipocotyl and root fragments. On the other hand, shoot tips and cotyledonary petioles formed callus tissue at the cut ends, and petioles only at abaxial ends. The growth of calli on all explant types was strongly stimulated by ZEA. Among the explants tested, only shoot tips exhibited shoot organogenesis. The highest frequency of shoot organogenesis was observed when the explants were cultured on a medium supplemented with 5.0 mg·dm^{-3} BA (100%) or 5.0 mg·dm^{-3} ZEA (97%). The highest shoot number per explant was obtained in the presence of 5.0 mg·dm^{-3} ZEA (8.4 on average). The presence of BA or ZEA in the proliferation medium inhibited rhizogenesis and the elongation growth of shoots. However, root organogenesis was supported by KN added into the medium.

Key words:

Polemonium coeruleum, callus, shoot tip, organogenesis

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