

**IN VITRO MICROPROPAGATION OF 4 HUNGARIAN BRYOPHYTES AS
POTENTIAL SOURCES FOR PHARMACOLOGICALLY ACTIVE SUBSTANCES**

Farmakológiaiag ígéretes 4 hazai mohafaj *in vitro* mikroszaporítása

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The plant kingdom is a rich source of pharmacologically active biomolecules, and bryophytes represent a relatively unexploited taxon within plants. From this point of view, Hungarian mosses are very promising, since only a small percent of the 659 species has been studied in detail. The aim of this project is to analyse Hungarian bryophyte species as potential sources of molecules for anticancer drug and antibiotic research. Important steps during the research are to identify bryophyte species with bioactivity, to isolate and to identify their active components and to characterize their effects in detail. Based on an *in vitro* screening of 58 species, the most promising species are further studied. In order to ensure sustainability of further research, *in vitro* micropropagation studies - of species regarded as the most promising - are being carried out. Optimization of surface sterilization (using 10% CaCl₂O₂ or 10% commercial Domestos) of *Brachythecium rutabulum*, *Oxyrrhynchium hians*, *Tortula muralis* and *Campylopus introflexus* is completed. In the selected bryophytes selection of appropriate explants (shoot tips or lateral shoots), optimization of substrates (1/2 MS without sucrose) for *in vitro* cultivation were carried out. Various explants of bryophyte species, different surface sterilization methods, various culture media with different plant hormone combinations and without hormones (1 mg l⁻¹ NAA/ 1 mg l⁻¹ BA/ 1 mg l⁻¹ 2, 4 D/ 1 mg l⁻¹ BA+ 0.1 mg l⁻¹ NAA/ 2 mg l⁻¹ BA/ 1 mg l⁻¹ NAA) were tested for optimal growth and morphogenesis. New moss shoots or protonema developments, depending on the hormonal supply, were observed. Growth response was recorded in every selected species during *in vitro* cultivation.

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