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Original Papers

HIGS method controlled the gene expression of a parasitic plant, *Cuscuta campestris*

Stem parasitic plant, *Cuscuta campestris*, develops an attachment structure called "holdfast" on the surface of its stem contacting to the host plant. Epidermal cells of holdfasts showed outgrowth, in which epidermal cell-patterning genes of *C. campestris* were hypothesized to be involved. To prove this hypothesis, Host-Induced Gene Silencing (HIGS) method was employed (S. Sultana *et al*., pp. 47–56). Aritificial miRNA targeting one of the *C. campestris* epidermal cell-patterning genes was produced in the first host, *Nicotiana tabacum* (left), loaded to parasitizing *C. campestris* (center), and then the effect of HIGS was evaluated by letting *C. campestris* parasitize to the second host, *Arabidopsis thaliana* (right). This approach successfully silenced the target gene of *C. campestris*, and repressed the outgrowth of the holdfast epidermal cells.

Photographed by Daiki Fujiwara (Osaka Pref. Univ.). (PENTAX Optio WG-1)

Cover illustration