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Website of the lab: <http://bbc.agr.nagoya-u.ac.jp/~graft/index2.html>

Insights from “Grafting biology”

Plant grafting has been an important technique in agriculture to propagate clones and to obtain benefits of certain rootstocks. However, graft-incompatibility has limited the technique. Recently, we found that *Nicotiana* species of Solanaceae show the ability to graft with distantly related plant species beyond the family. Graft adhesion with diverse angiosperms by *Nicotiana* species was probably facilitated by the secretion of a subclade of β -1,4-glucanases. The capability of interfamily grafting was also found in the model Orobanchaceae hemiparasitic plant, *Phtheirospermum japonicum*, which naturally invades to the tissues of host plants of different families. Transcriptome analysis indicated that the same clade of β -1,4-glucanase plays an important role in plant parasitism. Thus, grafting biology have opened new insights on plant systems to cure the wound tissues, such as sealing damaged tissues, reallocation of energy resources, cell division, tissue adhesion, tissue differentiation and vascular connection for systemic communication.

