Genetics in bloom

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This is a Gerbera plant. Credit: Teeri et al., *BMC Plant Biology*

Some of the molecular machinery that governs flower formation has been uncovered in the daisy-like Gerbera plants. Researchers writing in the open access journal *BMC Plant Biology* have published a pair of articles detailing how the complex Gerbera inflorescence is formed and how this process differs from other model plants, such as the more simple flowers of *Arabidopsis* species.

Teemu Teeri, from the University of Helsinki, Finland, worked with a team of researchers to carry out the studies. He said, "Gerbera, a member of the sunflower family, bears compressed inflorescence heads with three different flower types characterized by differences in both sex and floral symmetry. To understand how such a complex inflorescence structure is achieved at the molecular level, we have

characterized the array of Gerbera MADS box genes".

The researchers analyzed the expression and evolutionary relationships of six Gerbera genes (GSQUA1-6) that are closely related to flower architecture genes in other model species. It seems that this group of genes has expanded in the daisy plant family probably reflecting new functions for these genes in the formation of the complex Gerbera inflorescence.

Teeri said, "Our data indicate that none of the GSQUA genes are, by themselves, likely to play a role in defining floral organ identity in the sense of the 'A' function of the floral ABC model. Based on these results, Gerbera can be added to the growing list of plant species that lack the 'A' function comparable to *Arabidopsis*".

These findings not only inform our understanding of the complex floral structures of the daisy family but will also be essential in order to optimize growth and production of related crops such as sunflowers.

More information: Characterization of SQUAMOSA-like genes in Gerbera hybrida, including one involved in reproductive transition, Satu Ruokolainen, Yan Peng Ng, Suvi K Broholm, Victor A Albert, Paula Elomaa and Teemu H Teeri, BMC Plant Biology (in press), www.biomedcentral.com/bmcplantbiol/

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