

## How Orchid Flower Petals Get Their Shape

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<http://www.asianscientist.com/2015/04/in-the-lab/orchid-flower-petals-shape/>

*AsianScientist* (Apr. 28, 2015) - Orchid flowers are well-known for their unique shape and the beautiful patterns on their petals. A team of researchers from Taiwan have discovered that an orchid flower's unique perianth (shape) is the result of competition between two groups of proteins.

In a study published in the journal *Nature Plants*, Professor Yang Chang-Hsien and colleagues from the National Chung Hsing University in Taiwan showed that the shape of orchids is determined by a competition between two protein complexes, a phenomenon they named the perianth (P) code.

Unlike most flowers with star-shaped (actinomorphic) symmetry, orchid flowers typically have mirror-image (zygomorphic) symmetry with a striking well-differentiated lip that acts as the main pollinator attractant by employing visual, fragrance and tactile cues. These lips attract insects and enable the orchids to be pollinated.

The researchers found that two competing protein complexes serve different functions in perianth formation. The higher-order heterotetrameric SP (sepal/petal) complex specifies sepal/petal formation, whereas the L (lip) complex is exclusively required for lip formation.

The authors also found that orchid species from many subfamilies with different types of lips and petals all obey this perianth code. They were also able to convert lips into petals in two orchid species by reducing the activity of the L complex using gene silencing.

This study adds to the current knowledge of how orchid petals develop and the evolutionary changes that orchids have undergone to ensure pollination.

The article can be found at: [Hsu et al. \(2015\) Model For Perianth Formation In Orchids.](#)

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