Using ontologies to explore floral evolution in a non-model plant clade

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Abstract

The ability to successfully address the complex, multidimensional process of plant character evolution requires approaches that integrate across domains: genetics, evolution, development, and ecology. Additionally, in order to understand the patterns of plant character evolution across a broad phylogenetic scale, we must continue to extend beyond current model organisms and identify new candidate genes implicated in phenotypic evolution. I will explore the potential of ontologies to link the phenotypes and developmental processes of non-model plant clades to underlying candidate genes identified from the model plant Arabidopsis, with the overall goal of generating candidate gene hypotheses in non-model plants. This presentation will explore the process of building an ontology specific for a non-model clade which can be integrated with existing ontologies and repositories for model plants, using the genus Tropaeolum, commonly known as nasturtiums. As well as highlighting the resources and pipelines that facilitate the development of an ontology in a non-model clade, I will also discuss the broader challenges and the potential inherent in an ontological approach.

Keywords

Ontology, Character Evolution
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