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**Key processes for the rapid diversification of *Cheirolophus*  
(Asteraceae) on Macaronesian archipelagos**

per

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**Abstract**

Volcanic islands are excellent natural laboratories to test speciation and diversification hypotheses. For this reason, in the last decades the Macaronesian archipelagos have become a key subject for several evolutionary studies in many diverse plant groups. The genus *Cheirolophus* (Asteraceae), comprising c. 20 endemic species to the Canary and Madeira archipelagos, represents an ideal study case for discussing diversification on islands. The analyses based on AFLP markers confirmed the evolutionary distinctiveness of these species. Our phylogeographical analyses based on plastidial and nuclear sequences and using the latest Bayesian-based phylogenetic tools indicate that this radiation started c. 2 Mya. It represents one of the most remarkable examples of plant diversification in oceanic islands so far reported. This extraordinary process could be explained by the combined action of allopatric speciation, incipient adaptive radiation and hybridisation. Finally, our results suggest the important role of insularity, geological history, habitat isolation and plant features in generating the rapid diversification of *Cheirolophus* within such a small area.

