

Public Abstract

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Title:Understanding Genomic Evolution and Segregation Distortion in Solanaceae: A COSII Linkage Map in *Nicotiana*

We created linkage maps to investigate chromosomal evolution in a cross between two species of flowering tobacco (*Nicotiana plumbaginifolia* X *Nicotiana longiflora*). Our maps allowed us to investigate genetic compatibilities between these two species and observe genome evolution that has occurred within the Solanaceae (Nightshade) family. We were able to compare our linkage maps with other Solanaceae species, such as tomato, pepper and eggplant, and identify chromosomal rearrangements that have occurred since *Nicotiana* (tobacco) diverged from these other species.