

**Title:** Adaptation in diploids and tetraploids of *Biscutella laevigata*

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**Abstract**

Whole genome duplication (or autopolyploidy) can drive plant speciation, although adaptive underpinnings remain debated. Polyploids have been postulated to adapt faster to environmental changes than their diploid relatives. Additionally, selection is expected to act differently according to the ploidy. However, empirical evidences addressing adaptation to environment across different ploidies are still scarce. Taking advantage of the well-resolved evolutionary history of the diploid-autotetraploid species complex *Biscutella laevigata* (Brassicaceae), we address the genomic signatures of adaptation among pairs of diploid and tetraploid populations from contrasted elevations. Genome scans using whole-genome sequences of 91 individuals from 12 populations sampled in a factorial design highlighted candidate genes underlying adaptation to elevation and ploidy. In particular, window-based tests of isolation by distance and isolation by elevation characterize within each ploidy whether loci were predominantly shaped by spatial vs environmental reduction of gene flow.