Molecular phylogeny of the genus *Aurinia* (Brassicaceae) – preliminary report

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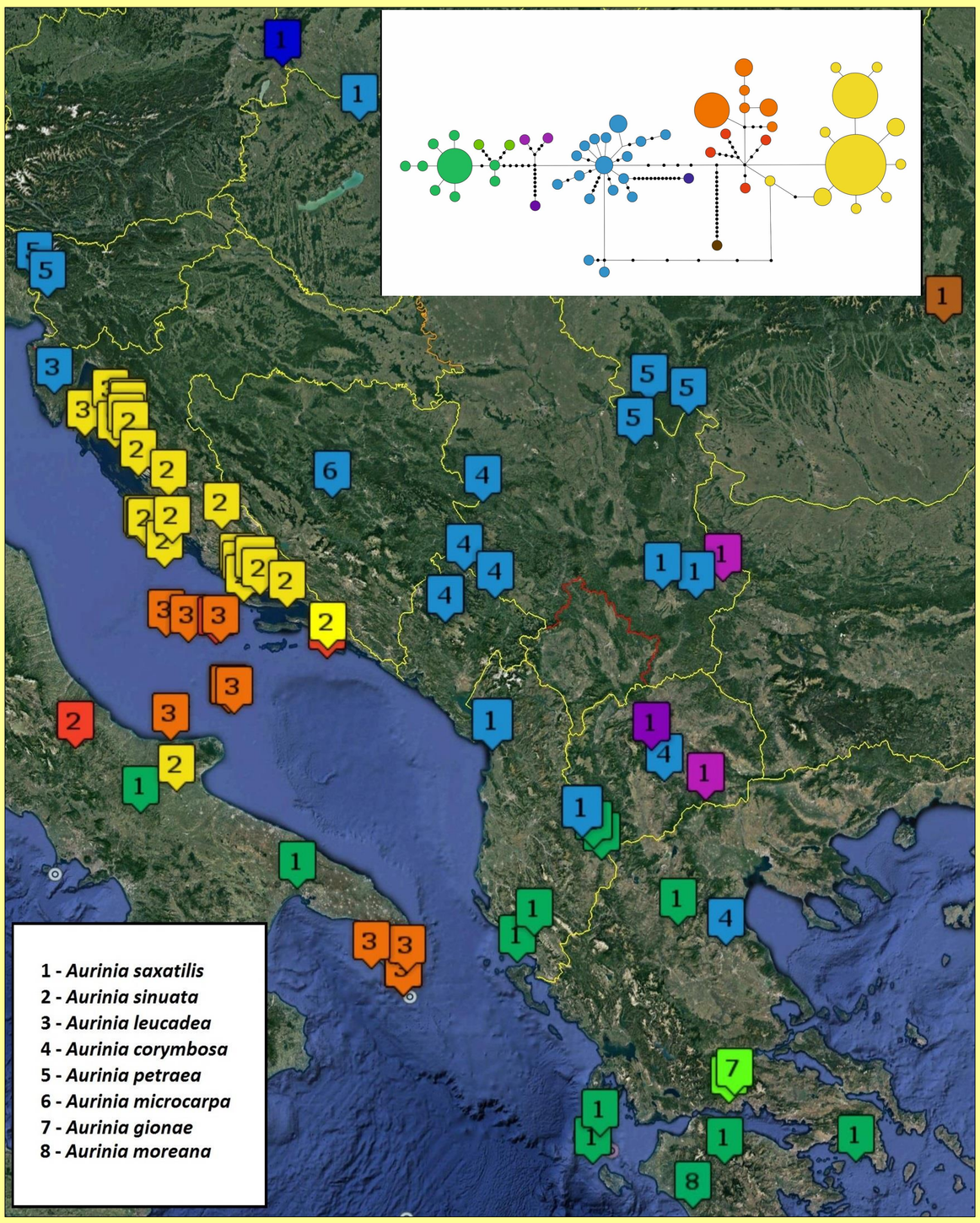
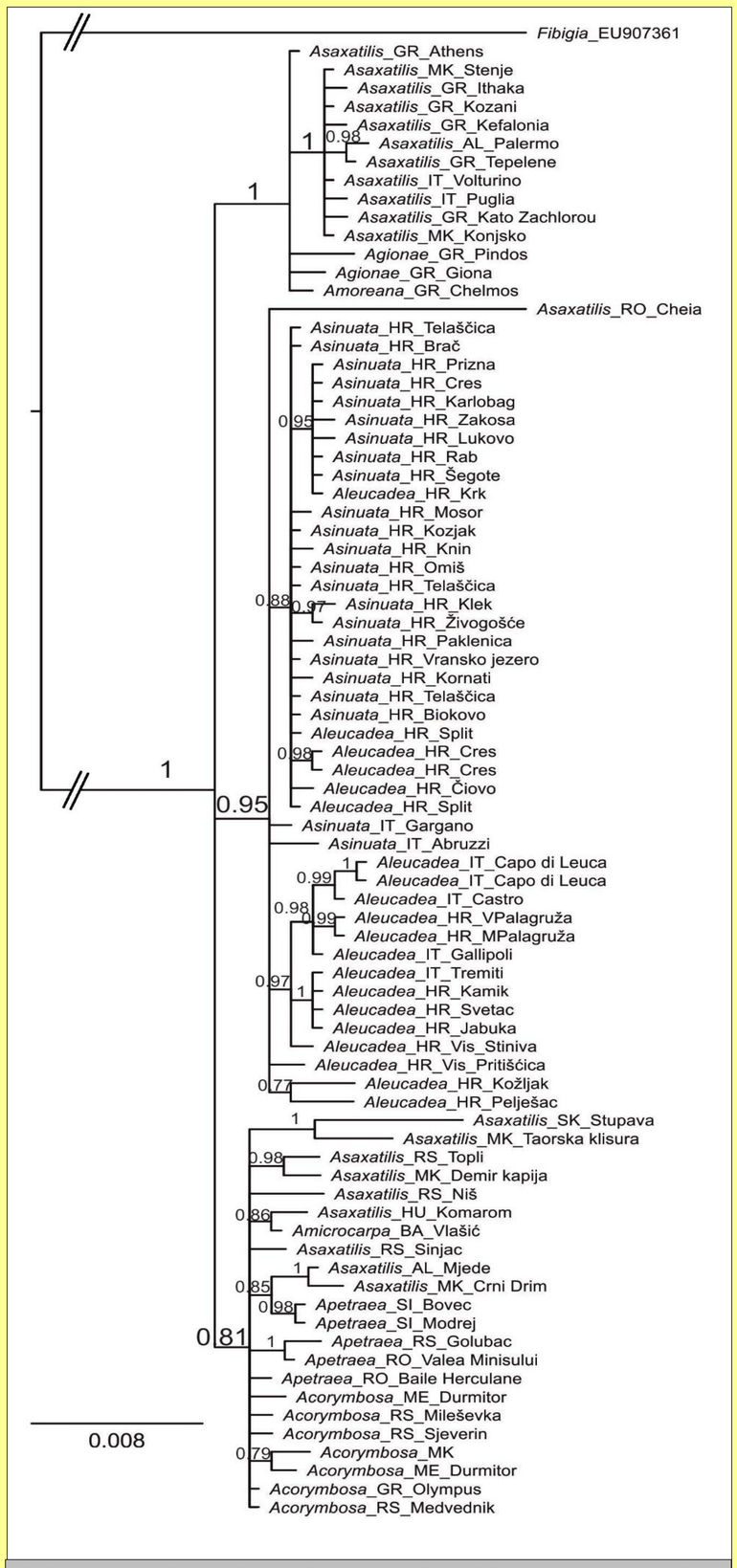
Aurinia is a genus within the Alysseae tribe (Brassicaceae) distinctive for South East Europe which currently consists of seven species (*A. corymbosa* Griseb., *A. gionae* (Quézel & Contandr.) Greuter & Burdet, *A. leucadea* (Guss.) K. Koch, *A. moreana* Tzanoud. & Iatroú, *A. petraea* (Ard.) Schur (including *A. microcarpa* (Vis.) Greuter & Burdet), *A. saxatilis* (L.) Desv. and *A. sinuata* (L.) Griseb). Morphologically, species from the genus are perennial herbs with an indumentum of stellate hairs, sinuate or dentate rosette leaves with petioles grooved and with swollen bases persistent on caudices and raceme inflorescences which are exclusively yellow-flowered.



In order to better understand the genetic biodiversity, we conducted a phylogenetic study of the genus *Aurinia* with the objective to determine the phylogeny of the genus and to delimit the spatial boundaries of all taxa in the genus. Consequently, the obtained data will provide insights into spatiotemporal diversification of the genus and offer an outline for the reconstruction of individual *Aurinia* phylogeographies. Sequence data from the nrDNA ITS (nuclear ribosomal DNA internal transcribed spacer) and a plastid region of the ndhF gene (NADH dehydrogenase F) were obtained and used in phylogenetic analyses.

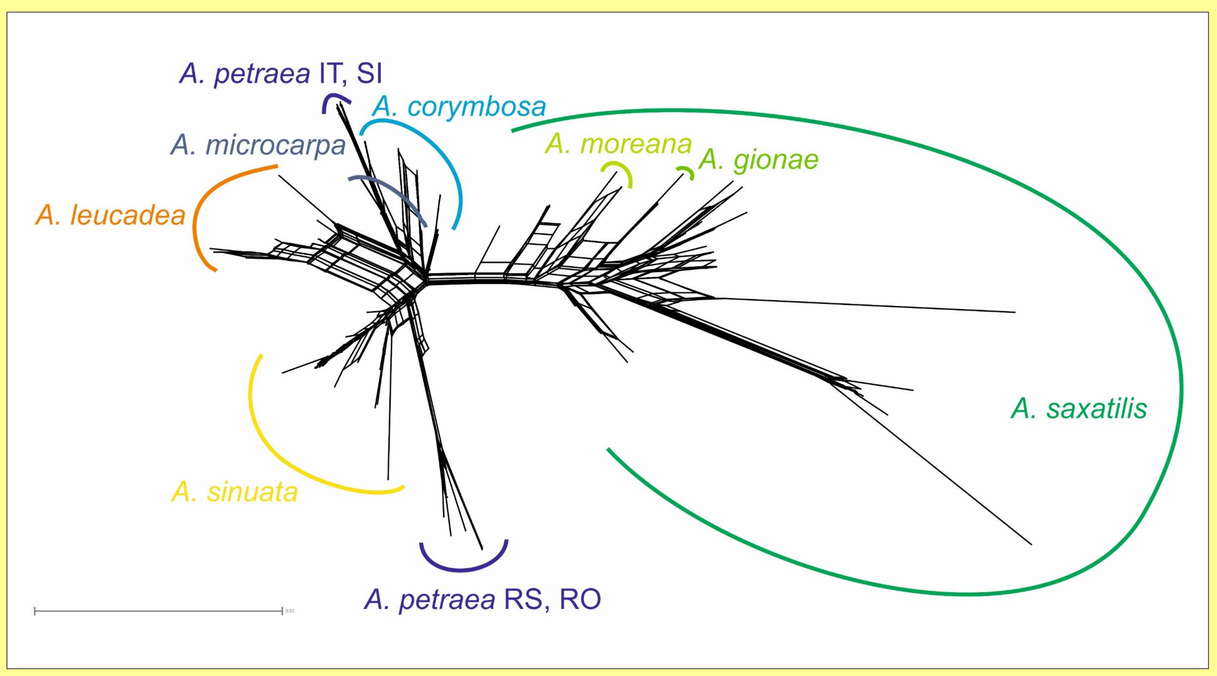
Plastid DNA variation in *Aurinia* based on ndhF sequences is partly geographically, but not taxonomically correlated. Upper right corner: statistical parsimony network of the 54 haplotypes encountered. The size of the circles is proportional to the square-root transformed frequency of the respective haplotype; haplotypes not sampled are shown as small black dots. Map: geographic distribution of haplotypes, numbers correspond to respective taxa.



Phylogenetic relationships of *Aurinia* inferred from Bayesian analysis of plastid *ndh*F data. Values above branches are Bayesian posterior probabilities.

A. corymbosa

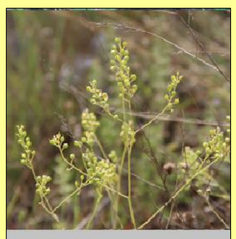
A. sinuata



The results of the phylogenetic analyses of the nrDNA ITS data sequences are here visualised as a NeighbourNet diagram which mainly supports the current taxonomy as well as the formation of geographically defined groups within some taxa as seen within the taxon *A. petraea.* The forming of the two groups is defined with their geographical separation, one group consisting of samples collected in Slovenia and northern Italy and the other in Serbia and Romania. Analyses of plastid dataset yielded a network showing geographical structuring forming three well supported groups and lacking clear taxonomical pattern. The observed incongruences between nuclear and plastid datasets are probably a result of hybridization or incomplete lineage sorting and reflect the complex evolutionary history of *Aurinia* taxa within microrefugial areas on the Balkan peninsula.

A. leucadea

A. petraea (IT, SI)



A. petraea (RS, RO)

A. moreana

A. gionae

A. saxatilis

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