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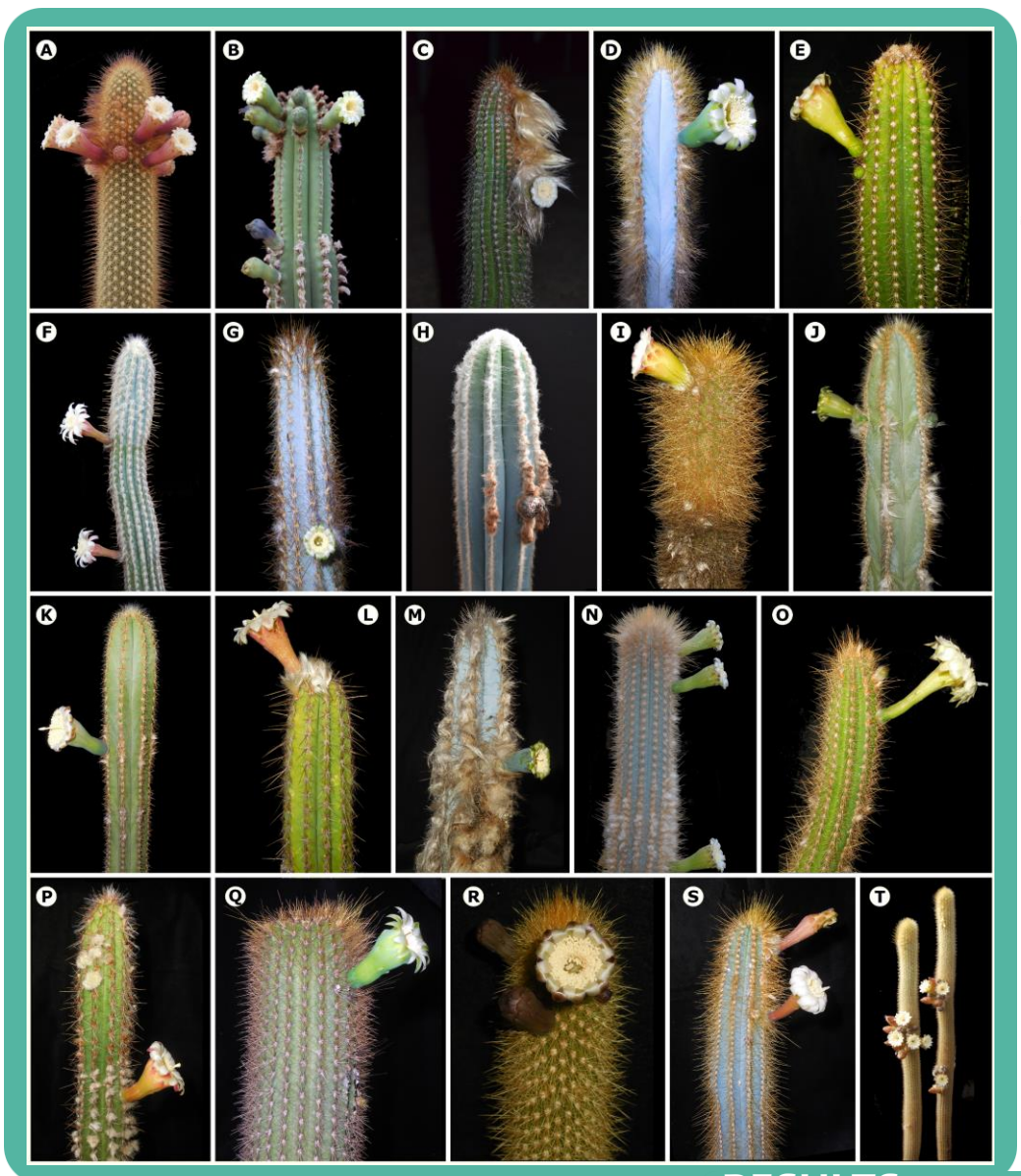
Assessing marks of introgression on the *Pilosocereus* cacti evolutionary radiation

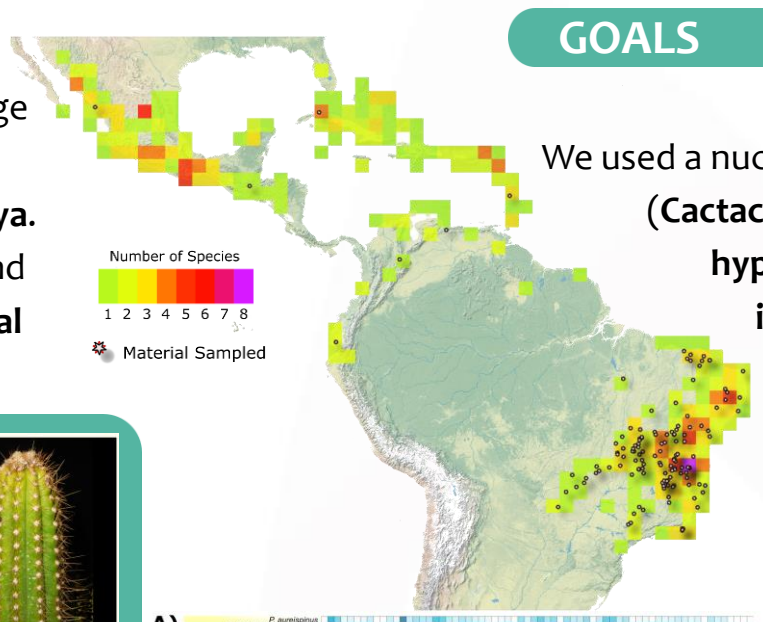
Matias Köhler[1], Monique Romeiro-Brito[1], Milena C.Telhe[1], Daniela Zappi[2], Nigel Taylor[1], Gerardus Olsthoorn[3], Fernando F.Franco[1], Evandro M.Moraes[1]

[1]São Carlos University (UFSCar), Brazil [2]Brasília University (UnB), Brazil [3]Olsthoorn Cactus, Brazil

BACKGROUND

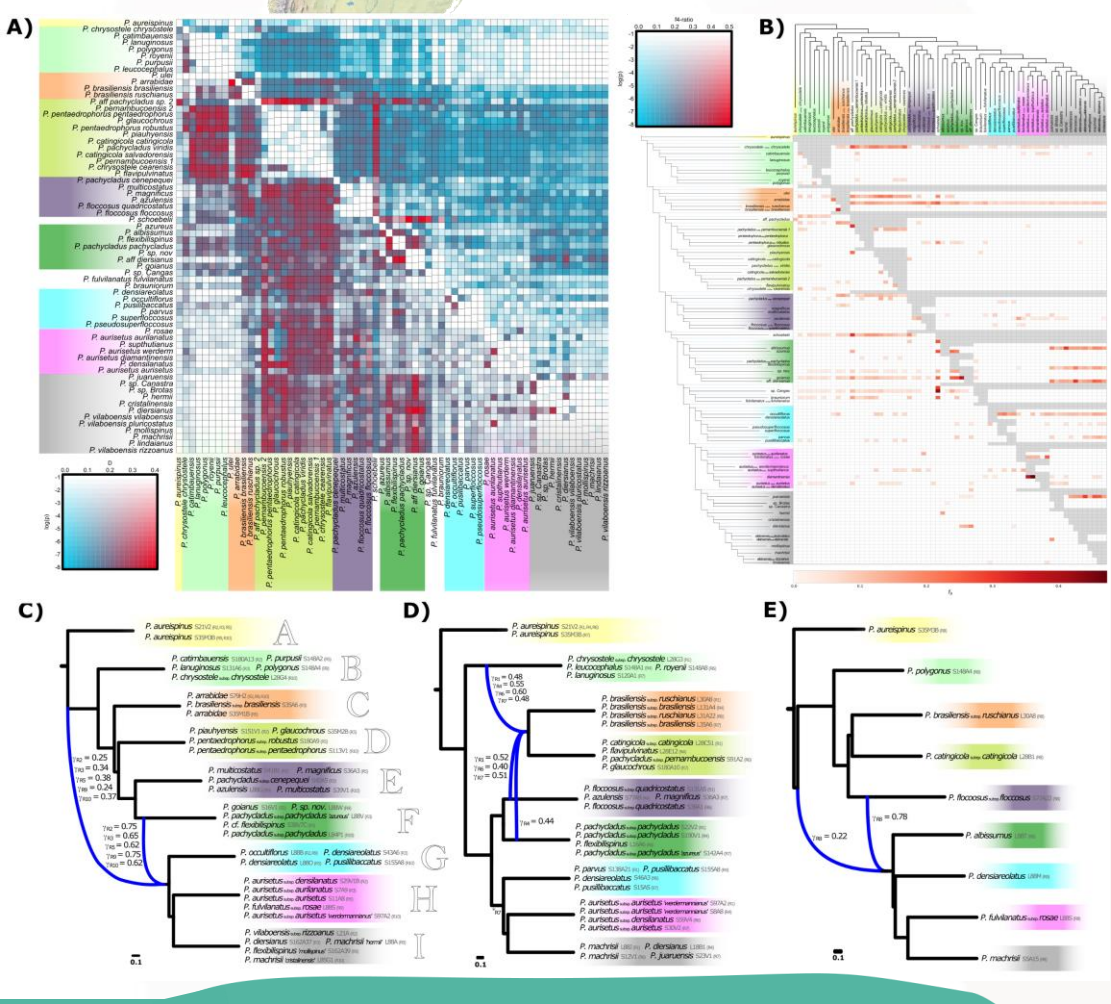
Pilosocereus **(~60 spp.)** is a remarkable Cactaceae lineage representing an **evolutionary radiation,** with most **speciation events** estimated to occur **over the past 2 Mya.** This group exhibits notable **morphological diversity,** and phylogenetic studies recover a **strong geographic signal** and **high morphological disparity.**



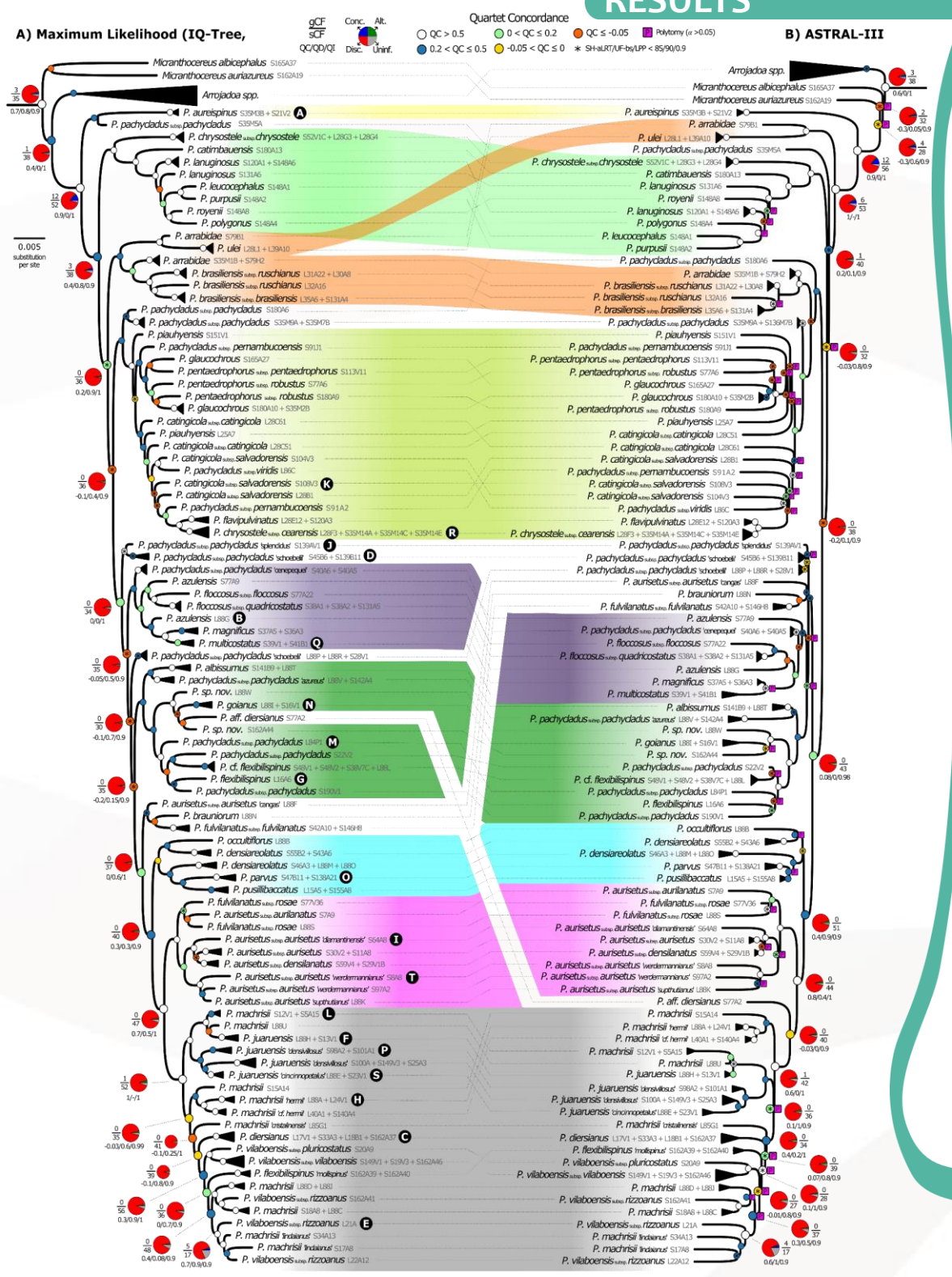


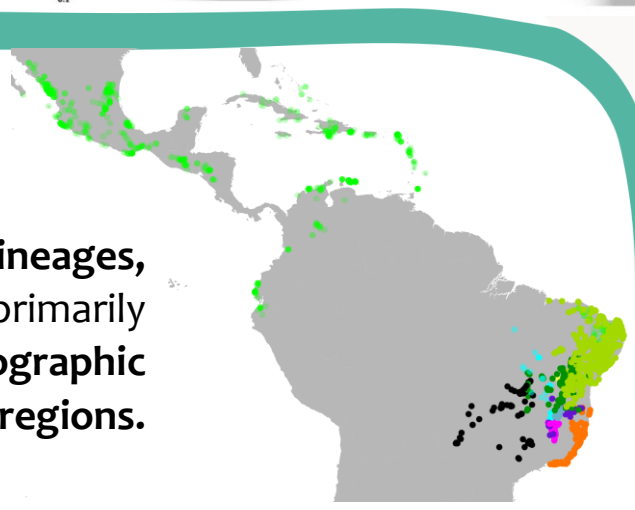
GOALS

We used a nuclear **target-enrichment** panel (**Cactaceae591**) to infer **phylogenetic hypotheses,** assessing **gene-tree incongruences, discordances,** and imprints of **hybridization** and **introgression** during the **diversification history.**



RESULTS





Nine major lineages, grouped primarily by **geographic regions.**

Rampant gene tree **incongruence** and **conflict** across nuclear markers and **species tree inferences.**

Widespread signs of **introgression,** many shared by **clade members.**

Putative **ancestral and current hybridization** events.

Incomplete Lineage Sorting (ILS) and **introgression** underlying evolutionary radiation and contributing to **phylogenetic uncertainty.**

@tunasdelsur

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