# Discovery of chloroplast capture in *Juniperus excelsa* complex and hybrid origin of *J. seravschanica* by chloroplast DNA, nuclear ITS and Single Copy Nuclear Genes (SCNG)

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## Abstract

Chloroplast molecular data of *pet*N-*psb*M, *trn*D-*trn*T, *trn*L-*trn*F, *trn*S-*trn*G, nuclear ITS and Single Copy Nuclear Genes data of *LHCA4*, *maldehy*, *myb*, *CnAIP3* and *4CL*, plus morphological data recognize three species in *Juniperus excelsa* complex as *J. excelsa, J. seravschanica, J. polycarpos* var. *turcomanica* and *J. polycarpos* var. *polycarpos.* In addition incompatibility between nuclear and chloroplast phylogenetic trees shows hybrid origin for *J. seravschanica.* Visualizing the geographical trends shows that these three species of this complex are clearly distributed in three very different climates.