

Table S1 Names and characteristics of the nuclear nSSR and chloroplast cpSSR microsatellite markers used for genotyping.

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Type of SSR	Locus	T °	Origin	Allele size range	Reference	Sequence (5'-3')
nSSR	MSQ 4	50	<i>Q. macrocarpa</i>	181-197	72	TCTCCTCTCCCCATAAACAGG
						GTTCTCTATCCAATCAGTAGTGAG
	MSQ 13	50	<i>Q. macrocarpa</i>	193-217	72	TGGCTGCACCTATGGCTCTTAG
						ACACTCAGACCCACCATTTTTCC-3 ´
	QrZAG7	57	<i>Q. robur</i>	109-116	73	CAACTTGGTGTTCGGATCA
						AGTGCATTTCTTTTATAGCATTCAC
	QrZAG11	50	<i>Q. robur</i>	203-273	73	CCTTGAAC TCGAAGGTGTCCTT
						GTAGGTC A AAACCATTGGTTGACT

QrZAG20	53	<i>Q. robur</i>	190-224	73	CCATTAAAAGAAGCAGTATTTTGT GCAACACTCAGCCTATATCTAGAA
QrZAG39	50	<i>Q. robur</i>	53-79	73	CACCGCTGGAATTTTAAGGGA GACCTAAGCCAAAGTGTGGGC
QpZAG9	53	<i>Q. petraea</i>	80-238	74	GCAATTACAGGCTAGGCTGG GTCTGGACCTAGCCCTCATG
QpZAG15	50	<i>Q. petraea</i>	111-141	74	CGATTTGATAATGACACTATGG CATCGACTCATTGTTAAGCAC
QpZAG36	48	<i>Q. petraea</i>	180-221	74	GATCAAAATTTGGAATATTAAGAGAG ACTGTGGTGGTGAGTCTAACATGTAG
QpZAG46	50	<i>Q. petraea</i>	165-193	74	CCCCTATTGAAGTCCTAGCCG TCTCCCATGTAAGTAGCTCTG

cpSSR

CmCs6	58	<i>C.sativa</i>	219-240	75	GAAAAAGGACCCTTCCTAAT CTTATGATCGTCACGAATTG
CmCs10	56	<i>C. sativa</i>	190-191	75	TCTTGCTCTTTGATTTTGAA GACCGCGAGAGTTATTTATT
CmCs9	55	<i>C.sativa</i>	119-121	75	AAAAATACTTCTTTTTTCGTTTTTC CCTGAATAAAATTCAAAATCAA
CmCs12	55	<i>C.sativa</i>	218-14	75	ATATTGGTAAAACGGCAACT TTTATGGCATGAAACAACCTC
CmCs13	55	<i>C.sativa</i>	141-143	75	CACATCTTCTTAACCCGAAA CCACGTGCTCTAATCCTCT
udt1	48	<i>Q. robur</i> and <i>Q. petraea</i>	100-1003	76	ATCTTACACTAAGCTCGGAA TTCAATAACTTGTTGATCCC

udt3	46	<i>Q. robur</i> and <i>Q. petraea</i>	143-145	76	TGTTAGTAATCCTTTCGTTT AGGTATAAAGTCTAAGGTAA
udt4	44	<i>Q. robur</i> and <i>Q. petraea</i>	166-186	76	GATAATATAAAGAGTCAAAT CCGAAAGGTCCTATACCTCG
udt5	46	<i>Q. robur</i> and <i>Q. petraea</i>	178-179	76	TAAATCTGGAAATCTGGGAA TT GATACATAGACTTGCCAA
ukk3	50	<i>Q. robur</i> and <i>Q. petraea</i>	115-116	76	TTAGATCGGGTAATCGTTCAA AAGTGAATAAATGGATAGAGC

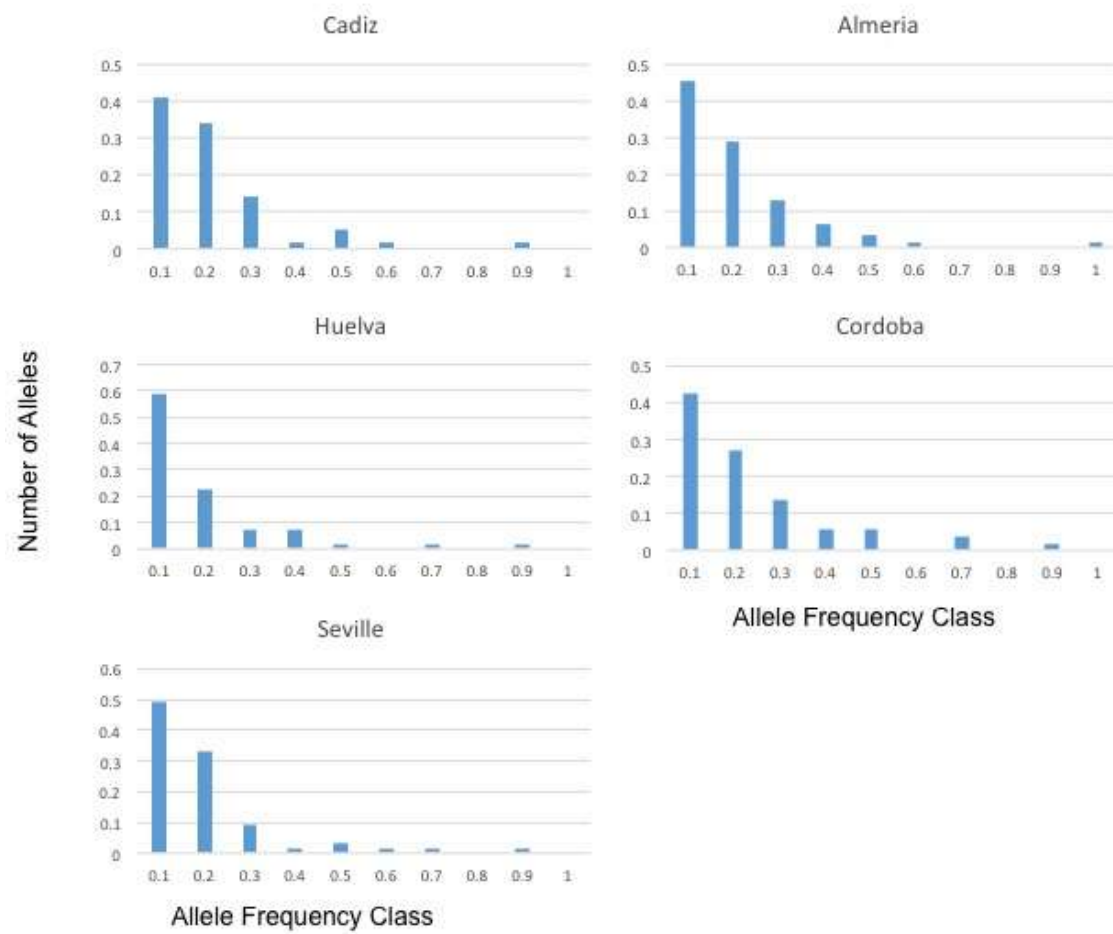
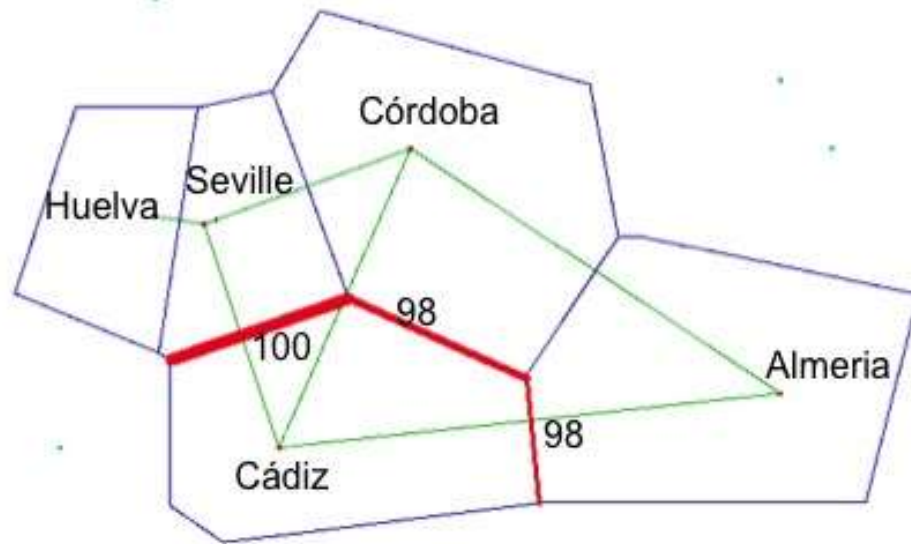
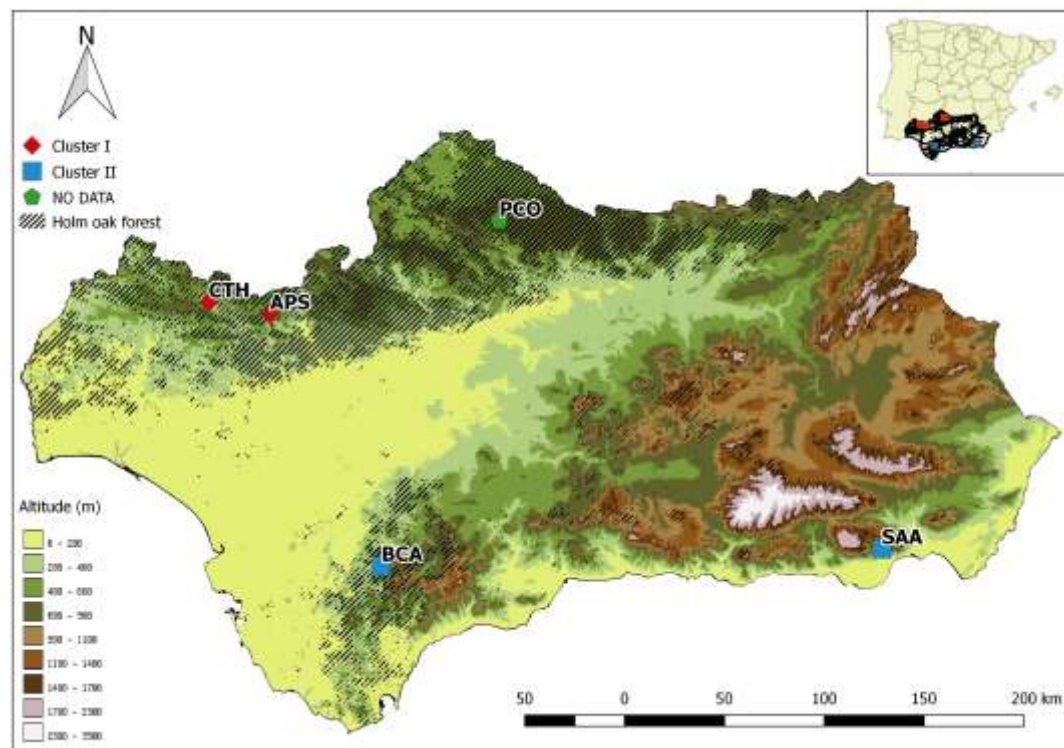


Figure S1 Mode-shift distributions of numbers of alleles at different allele frequencies in the five populations studied in this work.



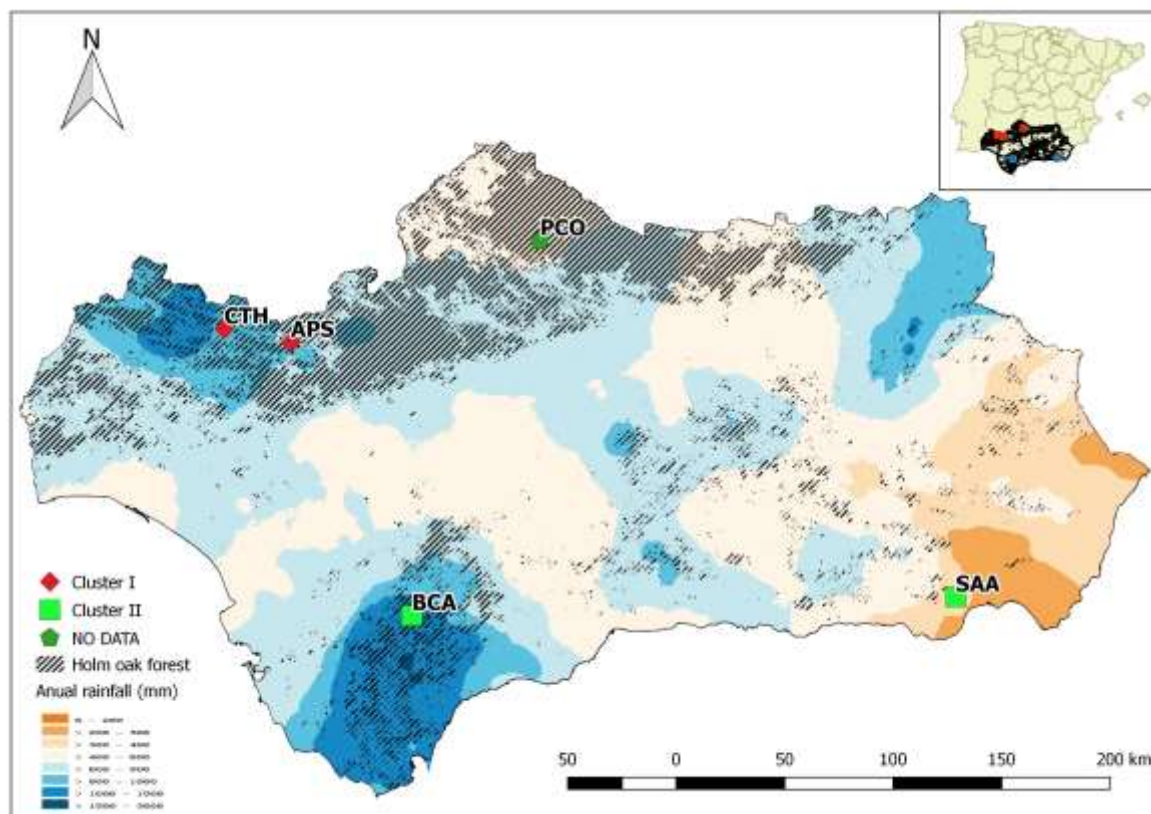
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4 **Figure S2 BARRIER plot of 5 populations of *Q. ilex* from Andalusia showing the first 3 significant barriers. Thickness of line indicates strength of**
 5 **barrier: 1- Cádiz, 2- Almería, 3- Huelva, 4- Córdoba, 5- Seville.**



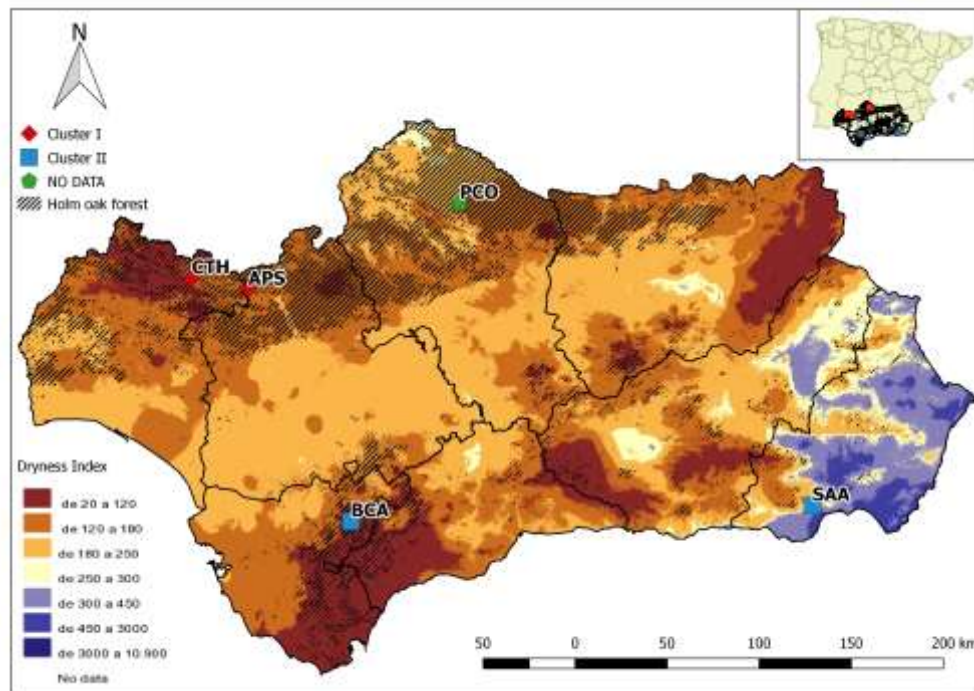
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7 Figure S3a



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9 Figure S3b



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11 Figure S3c

12 Figure S3: Andalusia map showing the location of the populations studied in this work and geographic information (A: altitude, B: annual rainfall and C: dryness index).