

Electronic Supplementary Material

Title: Nuclear microsatellite markers reveal the low genetic structure of *Pinus mugo* Turra (dwarf mountain pine) populations in Europe

Plant Systematics and Evolution

Authors: Weronika Barbara Żukowska^{1*}, Witold Wachowiak^{1,2}

¹ Institute of Dendrology, Polish Academy of Sciences, Parkowa 5, 62-035 Kórnik, Poland

² Institute of Environmental Biology, Faculty of Biology, Adam Mickiewicz University, Umultowska 89, 61-614 Poznań, Poland

*corresponding author; e-mail: wzukowska@man.poznan.pl

Online Resource 1 Characteristics of the 22 nSSR markers initially tested. The number of alleles, size range and deviation from HWE are shown only for loci analysed in the full dataset, otherwise as follows: a) no amplification; b) poor amplification; c) complex pattern; and d) non-specific products. * – $p < 0.01$; ** – $p < 0.001$; and ns – not significant

Locus	Repeat motif in the source species	No. of alleles	Size range [bp]	Deviation from HWE	Reference
ptTX2146	(GCT) ₄ GCC(GCT) ₇ GCC(GCT) ₈	24	153-264	ns	Elsik et al. 2000
ptTX3025	(CAA) ₁₀	6	263-278	**	Elsik et al. 2000
ptTX3032	(GAT) ₃₅ (GAC) ₃ GAT(GAC) ₈ -(GAC) ₆ AAT(GAT) ₆	a)			Elsik et al. 2000
ptTX3107	(CAT) ₁₄	b)			Elsik & Williams 2001
ptTX3116	(TTG) ₇ -(TTG) ₅	d)			Elsik & Williams 2001
ptTX4001	(CA) ₁₅	10	201-221	**	Zhou et al. 2004
ptTX4011	(CA) ₂₀	13	260-286	**	Zhou et al. 2004
SPAC 11.4	(AT) ₅ (GT) ₁₉	b)			Soranzo et al. 1998
SPAC 11.6	(CA) ₂₉ (TA) ₇	a) or d)			Soranzo et al. 1998
SPAC 11.8	(TG) ₁₆	a)			Soranzo et al. 1998
SPAC 12.5	(GT) ₂₀ (GA) ₁₀	a) or c)			Soranzo et al. 1998
SPAG 7.14	(TG) ₁₇ (AG) ₂₁	37	183-265	**	Soranzo et al. 1998
psyl2	(GCT) ₅	6	198-213	ns	Sebastiani et al. 2012
psyl16	(AT) ₇	7	201-213	*	Sebastiani et al. 2012
psyl17	(TA) ₇	c)			Sebastiani et al. 2012
psyl18	(GCA) ₇	6	289-304	**	Sebastiani et al. 2012
psyl19	(GCT) ₇	b)			Sebastiani et al. 2012
psyl25	(GCA) ₅	4	213-222	ns	Sebastiani et al. 2012
psyl36	(GTC) ₇	5	250-262	**	Sebastiani et al. 2012
psyl42	(TC) ₉	5	169-179	ns	Sebastiani et al. 2012
psyl44	(CGG) ₅	3	169-175	ns	Sebastiani et al. 2012
psyl57	(ACC) ₇	7	187-205	ns	Sebastiani et al. 2012

References:

- Elsik CG, Minihan VT, Hall SE, Scarpa AM, Williams CG (2000) Low-copy microsatellite markers for *Pinus taeda* L. *Genome* 43: 550-555. doi: 10.1139/g00-002
- Elsik CG, Williams CG (2001) Low-copy microsatellite recovery from a conifer genome. *Theor Appl Genet* 103: 1189-1195. doi: 10.1007/s001220100725
- Sebastiani F, Pinzauti F, Kujala ST, González-Martínez SC, Vendramin GG (2012) Novel polymorphic nuclear microsatellite markers for *Pinus sylvestris* L. *Conserv Genet Resour* 4: 231-234. doi: 10.1007/s12686-011-9513-5
- Soranzo N, Provan J, Powell W (1998) Characterization of microsatellite loci in *Pinus sylvestris* L. *Molec Ecol* 7: 1260-1261
- Zhou Y, Bui T, Auckland LD, Williams CG (2004) Undermethylated DNA as a source of microsatellites from a conifer genome. *Genome* 45: 91-99