



Digital supplementary material to

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Supplementary Table S1. Allele frequencies given as 100x.

Population	GPI			ME		PEP				PGM						EST			PGK		
	70	100	other	85	100	70	80	90	100	70	90	100	120	140	other	70	100	120	70	100	other
<i>F. aquilonia</i>																					
aq1	16	84	0	6	94	0	63	0	37	10	1	89	0	0	0	0	79	21	19	81	0
aq2	16	84	0	0	100	0	57	0	44	16	1	82	1	0	0	2	81	17	18	82	0
aq3	10	90	0	12	89	0	62	0	38	5	0	95	0	0	0	0	65	35	27	71	1
aq4	19	81	0	1	99	0	53	0	47	9	0	89	2	0	0	0	92	8	25	75	0
aq5	11	89	0	1	99	0	49	0	51	28	1	70	1	0	0	1	56	44	26	74	0
aq6	17	83	0	0	100	0	27	5	68	25	0	68	2	5	0	0	89	12	37	63	0
aq7	6	94	0	0	100	0	56	0	44	20	0	76	4	0	0	0	84	16	28	72	0
aq9	25	75	0	2	98	0	62	0	38	26	1	68	5	0	0	1	77	22	30	70	0
aq11	16	85	0	10	90	0	61	0	39	13	0	87	0	0	0	1	70	29	25	75	0
aq12	22	79	0	5	95	0	57	0	43	23	0	71	5	0	0	4	78	18	22	78	0
aq13	19	81	0	0	100	0	64	0	36	26	0	69	4	0	0	0	86	14	23	77	0
aq14	16	84	0	0	100	0	59	0	41	25	2	65	8	2	0	2	81	18	19	80	1
aq15	17	83	0	0	100	0	28	0	72	25	0	75	0	0	0	0	79	21	32	68	0
aq16	10	90	0	1	99	0	41	0	59	19	0	80	1	0	0	1	73	27	15	85	0
aq17	19	81	0	2	98	0	65	0	35	13	0	83	3	0	0	6	75	19	27	69	4
aq18	15	84	0	0	100	0	57	0	43	27	0	70	3	0	0	1	76	23	32	68	0
aq19	18	82	0	7	93	0	65	1	34	6	0	86	7	1	0	0	78	21	28	71	2
aq20	21	79	1	1	99	1	69	0	30	7	0	91	2	0	0	1	79	20	32	67	1
aq21	37	63	0	0	100	0	30	0	69	20	0	75	5	0	0	1	75	24	19	81	0
aq22	22	78	0	0	100	0	63	0	37	16	0	83	1	0	0	8	71	21	25	75	0
aq23	32	68	0	0	100	0	32	0	68	12	0	85	2	0	0	12	64	24	19	81	0
aq24	47	53	0	0	100	0	52	0	48	49	0	49	1	0	0	0	69	31	18	81	0
aq25	21	79	0	0	100	2	46	0	52	36	4	60	0	1	0	10	62	27	29	71	0
aq26	45	55	0	0	100	0	29	0	71	31	0	69	0	0	1	2	65	33	20	80	0
aq27	12	88	0	0	100	0	18	0	82	22	3	59	15	0	1	0	67	33	11	88	1
aq28	16	84	0	0	100	0	32	0	68	21	0	75	0	0	5	5	75	20	30	70	0
aq29	31	70	0	0	100	0	32	0	69	8	8	80	0	4	0	6	77	18	3	97	0

aq30	40	60	0	0	100	0	31	0	70	23	3	74	0	0	0	7	61	32	34	67	0
aq31	47	53	0	0	100	0	31	0	69	20	0	80	0	0	0	10	65	25	19	81	0
aq32	32	68	0	0	100	0	31	0	70	39	3	45	13	0	1	1	86	14	8	90	2
aq33	62	39	0	0	100	0	39	0	61	26	1	69	5	0	0	5	64	31	36	64	0
aq34	15	85	0	0	100	0	35	0	65	12	0	88	0	0	0	22	60	18	2	98	0
aq35	38	62	0	0	100	0	47	0	54	2	1	98	0	0	0	31	51	19	26	74	0
aq36	23	77	0	0	100	0	15	0	85	8	0	78	14	0	0	2	66	32	45	55	0
aqIrl	15	86	0	0	100	0	0	0	100	0	0	53	47	0	0	1	86	14	17	83	0
aqSwi	36	64	0	0	100	0	26	0	74	0	0	100	0	0	0	0	97	3	0	100	0
<i>F. lugubris</i>																					
lu1	64	36	0	0	100	0	70	0	30	0	0	100	0	0	0	0	86	14	13	87	0
lu3	51	49	0	0	100	0	63	0	37	0	0	100	0	0	0	0	79	21	30	70	0
lu5	52	48	1	17	83	0	52	7	42	36	1	61	2	0	0	0	86	14	19	81	0
lu8	12	86	2	14	87	2	65	1	32	26	0	66	3	5	0	0	95	5	22	74	4
lu9	7	94	0	3	97	0	88	0	12	19	0	76	5	0	0	5	79	16	37	53	10
lu10	33	66	2	25	75	0	89	0	12	7	0	93	0	0	0	0	94	6	38	62	0
lu11	31	69	0	7	93	0	78	1	21	7	0	90	0	0	4	0	100	0	30	63	7
lu14	0	100	0	8	92	0	90	1	9	0	0	100	0	0	0	0	96	5	30	69	1
lu15	31	69	0	19	81	0	94	0	7	2	0	98	0	0	0	0	82	18	43	57	0
lu16	38	62	0	0	100	0	21	0	79	7	0	93	0	0	0	0	62	38	17	83	0
lu21	24	76	0	10	90	0	85	3	13	5	0	95	0	0	0	0	96	5	21	79	0
lu29	7	89	4	14	86	0	82	16	3	4	0	96	0	0	0	0	96	4	46	55	0
lu30	42	58	0	0	100	0	91	3	6	3	0	97	0	0	0	0	100	0	44	56	0
lu34	41	59	0	6	94	0	90	5	5	0	0	98	0	0	2	0	94	6	56	44	0
lu40	16	84	0	26	74	0	80	0	20	0	2	91	3	4	0	0	100	0	43	56	1
luIrl	100	0	0	3	97	0	100	0	0	0	0	100	0	0	0	0	100	0	67	33	0
luSwi	99	1	0	1	99	0	100	0	0	0	0	100	0	0	0	0	96	4	7	93	0
<i>F. rufa</i>																					
ru28	0	100	0	0	100	3	26	0	71	11	0	79	0	11	0	0	100	0	0	100	0
ru34	0	100	0	9	91	25	47	0	28	0	52	26	0	23	0	4	91	5	0	92	8
ru38	0	100	0	0	100	5	26	0	70	0	31	38	1	30	0	8	92	0	2	87	12
ru40	1	99	0	0	100	40	18	0	42	2	19	44	0	35	0	12	87	1	3	97	0
ruGer	3	97	0	0	100	22	43	0	35	0	48	28	0	25	0	27	73	0	10	90	0

ruSwi	0	100	0	0	100	4	53	0	44	0	30	47	0	23	0	0	89	11	0	100	0
<i>F. polycтена</i>																					
po37	0	100	0	0	100	0	41	0	60	0	15	85	0	0	0	11	90	0	15	85	0
poDen	8	92	0	0	100	1	50	0	49	0	26	61	4	9	0	23	74	3	1	99	0
poGer	0	100	0	1	99	1	67	0	33	0	10	74	0	16	0	0	98	3	20	79	1
poSwi	13	87	0	0	100	15	56	0	29	0	4	77	2	17	0	0	94	6	2	98	0
<i>F. paralugubris</i>																					
paSwi	68	32	0	13	87	0	22	0	78	0	0	90	10	0	0	0	85	15	2	98	0
<i>F. aquilonia</i> × <i>F. polycтена</i>																					
hyb39	24	76	0	0	100	0	0	0	100	42	0	58	0	0	0	0	97	3	42	58	0
hyb40	33	68	0	0	100	0	10	0	90	0	8	51	0	42	0	0	65	35	22	78	0

Supplementary Table S2. Sample sizes (n = number of nests, N = number of individuals genotyped) and the genetic estimates (r = genetic relatedness, F = fixation index, H = expected heterozygosity).

Population	Location	n	N	r	F	H
<i>F. aquilonia</i>						
aq1	Vilhelmina	37	364	0.22	0.11	0.28
aq2	Ammarnäs	34	330	0.08	0.03	0.28
aq3	Arvidsjaur	24	246	0.20	0.04	0.30
aq4	Jokkmokk	7	65	0.28	0.09	0.26
aq5	Jockfall	26	256	0.39	0.16	0.34
aq6	Kaamanen	28	279	0.39	0.15	0.32
aq7	Lemmenjoki	22	224	0.31	0.11	0.27
aq9	Pokka	10	144	0.31	0.17	0.36
aq11	Yllästunturi	14	125	0.17	0.00	0.32
aq12	Salla	40	400	0.26	0.15	0.34
aq13	Suomutunturi	13	130	0.21	0.11	0.30
aq14	Rovaniemi	38	464	0.34	0.22	0.32
aq15	Aavasaksa	10	49	0.10	0.09	0.29
aq16	Perä-Posio	23	227	0.36	0.21	0.28
aq17	Vanttauskoski	42	405	0.18	0.09	0.32
aq18	Oulanka	36	360	0.07	0.05	0.33
aq19	Riisitunturi	29	293	0.42	0.18	0.32
aq20	Iso-Syöte	21	163	-0.02	0.11	0.29
aq21	Hailuoto	9	77	0.25	0.12	0.33
aq22	Rokua	28	264	0.14	0.04	0.32
aq23	Hyrnsalmi	31	301	0.31	0.13	0.34
aq24	Sotkamo	31	310	0.24	0.10	0.37
aq25	Nurmes	22	222	0.25	0.14	0.38
aq26	Pyhäsalmi	17	175	0.26	0.10	0.35
aq27	Pamilo	29	290	0.43	0.27	0.29
aq28	Konginkangas	29	287	0.32	0.05	0.32
aq29	Närpiö	8	78	0.34	0.11	0.28
aq30	Jämsä	22	220	0.24	0.12	0.38
aq31	Leivonmäki	36	362	0.20	0.01	0.35
aq32	Kerimäki	29	288	0.36	0.12	0.32
aq33	Vammala	23	210	0.26	0.18	0.39
aq34	Pusula	56	597	0.15	0.09	0.25
aq35	Ruotsinpyhtää	38	380	0.12	0.06	0.33
aq36	Solkulla	33	389	0.03	0.01	0.32
aqIrl	Ireland	15	196	0.22	0.33	0.21
aqSwi	Switzerland	14	141	0.21	0.06	0.15
<i>F. lugubris</i>						
lu1	Vilhelmina	13	130	0.44	0.10	0.23

lu3	Arvidsjaur	5	50	0.55	0.07	0.29
lu5	Jockfall	12	120	0.67	0.26	0.40
lu8	Saariselkä	19	186	0.56	0.31	0.33
lu9	Pokka	6	87	0.70	0.10	0.31
lu10	Aakenustunturi	14	129	0.60	0.22	0.31
lu11	Yllästunturi	9	77	0.65	0.25	0.26
lu14	Rovaniemi	7	70	0.54	-0.04	0.15
lu15	Aavasaksa	6	37	0.42	0.03	0.28
lu16	Perä-Posio	10	104	0.50	0.17	0.28
lu21	Hailuoto	6	60	0.45	0.02	0.22
lu29	Närpiö	8	80	0.51	0.08	0.24
lu30	Jämsä	6	60	0.35	-0.20	0.20
lu34	Pusula	13	144	0.45	0.03	0.24
lu40	Tvärminne	20	432	0.63	0.30	0.30
luIrl	Ireland	16	170	0.53	-0.05	0.08
luSwi	Switzerland	35	358	0.32	0.09	0.04
<i>F. rufa</i>						
ru28	Konginkangas	7	70	0.64	0.07	0.13
ru34	Pusula	6	65	0.70	0.24	0.30
ru38	Inkoo	24	271	0.56	0.01	0.25
ru40	Tvärminne	25	348	0.72	0.32	0.29
ruGer	Germany	11	114	0.62	0.10	0.32
ruSwi	Switzerland	35	326	0.52	0.36	0.23
<i>F. polycтена</i>						
po37	Kauniainen	18	141	0.31	-0.11	0.20
poDen	Denmark	9	90	0.38	0.27	0.27
poGer	Germany	15	149	0.13	0.13	0.21
poSwi	Switzerland	22	214	0.12	0.07	0.22
<i>F. paralugubris</i>						
paSwi	Switzerland	59	625	0.40	0.22	0.25
<i>F. aquilonia</i> × <i>F. polycтена</i>						
hyb39	Bromarv	20	181	0.08	0.06	0.23
hyb40	Tvärminne	14	204	0.06	-0.04	0.33

Supplementary Fig S1. UPGMA clustering done by omitting one locus at a time. The omitted locus is (a) *Gpi*, (b) *Me*, (c) *Pep*, (d) *Pgm*, (e) *Est*, and (f) *Pgk*.

