Patterns of evolution at the gametophytic self-incompatibility *Sorbus aucuparia* (Pyrinae) *S*-pollen genes support the non-self recognition by multiple factors model

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Supp. Table S1. Primers used in this work

Forward		Reverse		Annealing temperature (^{0}C)	Size of the expected amplification product (bp)
S-RNase					
SorbusRNaseF	AAGTTGTTTACGGTTCAC	SorbusRNaseR	TATTCTTTTGGCACTTGA	48	variable (larger than 409)
S-RNaseFT–F *	TTTACGCAGCAATATCAG	S-RNase(I/T)W- R *	ACRTTYGGCCAAATARTT	48	variable (larger than 213)
MaCiF1+	ATTWTCAATTTACGCAGCAATAATCAG	Mac2/3R1+	GBACGTTYGGCCAAATAATTNYC	50	variable (larger than 219)
S2-RNaseF	GGACCTCACCCAGAAAAT	S2-RNaseR	GTTCAATCTTCGCCTTTG	51	450
S10-RNaseF	CTCTAATGGACCTGACCC	S10-RNaseF	GCGTATGGCACTTTCAAT	51	1050
S17-RNaseF	TTCACTGTTCACGGTTTG	S17-RNaseF	CGTTTTGTTTCTGGGTTT	50	550
S20-RNaseF	TGGGAAACACAGTGGGAA	S20-RNaseF	TTGGCTTTGGATAGGTAA	47	200
SFBBs					
SFBBgenF	AAGTCYCTGATGMGRTTC	SFBBgenR	GTCCATTACCCAYRTYTC	48	870 to 889
SFBB1F	ATGAACAACAAACTATCG	SFBB1R	TAAATCAAATGAAAGTAA	50	642
SFBB2F	CCACTTCTATCCTTCTCC	SFBB2-1R	CATTACCCATATTTCAAG	49	767

		SFBB2-2R	TAATGAGAGCAAAAAGAA	48	705
SFBB3F	TTCTCAACCGTTCTCAGT	SFBB3R	AATCAAATGAAAGTATGC	52	588
SFBB5F	GTGAAACTCCTGAAGATC	SFBB5R	CCTAGTGTCAATGGATAA	49	1015
SFBB6F	TTCTCATCCTTCACTTGC	SFBB6R	AACCTCGTCACATTTCCA	50	879
SFBB7F	CATCAATAGTCCAAGTTT	SFBB7-1R	AAGCAATAYGAAGTGACA	50	789
		SFBB7-2R	AACCAGAATAGGGAATGC	50	614
SFBB8F	CTCTTATCAATAGTCCAT	SFBB8R	AAGGTCCAGCAGTTAGGT	48	897
SFBB9F	TGTATCCTTCTCAACCGT	SFBB9R	CTCGCCATCGTTTGCAAG	52	579
SFBB11F	CTTCTACCTTCCCCwCCT	SFBB11R	ATAACAAAATCCCTTCAT	52	279
SFBB13F	ATTCAGGCAACTTCCCCC	SFBB13R	TTAGAAAACTCAAAATCC	52	417
SFBB14 F	CAGGGAAAACTGTTATTA	SFBB14R	AAGAAGTGATGGATTCAT	52	489
SFBB15F	AGACCATCATCCTGTAGT	SFBB15R	GACAAGAATCAAGATAGC	52	371
SFBB5Belg6S2F	GTGAAACTCCTGAAGATC	SFBB5Belg6S2R	TAACGAGAGCAATAAGAG	52	893
SFBB5Belg5S20F	TGGACAGCAAACTCTCAT	SFBB5Belg5S20R	CTCATCACCTAAATCAAT	55	650
SFBB6Belg6S2F	GAGCGTATTCTTCTTCCC	SFBB6Belg6S2R	AACCTCGTCACATTTCCA	56	438
SFBB8Belg6S2F	GTGGACAACAAACTCTCA	SFBB8Belg6S2R	AATAATGTGGAAGGCTCA	49	779
SFBB8Belg5S17F	TGTATCCTTCTCAACTGC	SFBB8Belg5S17R	TCCGTCATCATAGTCCAT	48	783
SFBB8Belg5S20F	GCAACTTCCTGATTCATA	SFBB8Belg5S20R	TTAGGTGTTTTGTCCATA	48	560

* acoording to Kim *et al*. 2009

\+ according to Carrera *et al*. 2009

Supp. Table S2. RFLP's used to identify *SFBB1*, *SFBB2*, *SFBB3*, *SFBB5*, *SFBB7*, *SFBB8*, *SFBB9*, *SFBB11*, *SFBB13*, and *SFBB14* genes of the *S*22 and *Sa*-haplotypes

Gene	Primers	Enzyme		Haplotype		
				S22	*Sa*	*Sc*
SFBB1	SFBB1F+SFBB1R	*S22*	*Sau*3AI	115;168;359	115;126;168;233	n.a.
		Sa	*Hind*III	642	86;556	n.a
SFBB2	SFBB2F+SFBB2-1R	*S22*	*Aci*I	115;652	767	767
		Sa	*Bcc*I	767	68;263;436	732
SFBB3	SFBB3F+SFBB3R	*S22*	*Taq*I	78;217;293	293;295	293;295
		Sa	*Rsa*I	63;114;160;251	28;63;223;274	63;114;160;251
SFBB5	SFBB5F+SFBB5R	*S22*	*Ple*I	145;870	1015	915
		Sa	*Hpy*CH4IV	226;789	226;297;492	226;789
SFBB7	SFBB7F+SFBB7R	*S22*	*Ple*I	202;567	789	202;615 (n.a)
		Sa	*Bsr*I	789	316;473	789
SFBB8	SFBB8F+SFBB8R	*S22*	*Ava*II	6;194;697	6;52;142;697	6;52;142;697
		Sa	*Alu*I+*Mbo*I	30;334;515	30;204;311;334	30;54;204;255;334
SFBB9	SFBB9F+SFBB9R	*S22*	*Mse*I	122;457	88;122;369	88;122;369

		Sa	*Alu*I+*Sau*3AI	89;132;358	257;322	36;221;322
SFBB11	SFBB11F+SFBB11R	*S22*	*Dde*I	17;63;93;106	17;106;156	n.a
		Sa	*Hpy*CH4IV	279	139;140	279
SFBB13	SFBB13F+SFBB13R	*S22*	*Rsa*I	49;81;287	130;287	130;287
		Sa	*Nla*III	200;217	24;193;200	24;193;200
SFBB14	SFBB14F+SFBB14R	*S22*	*Mwo*I	225;264	489	n.a.
		Sa	*Hind*III	489	110;379	489

Supp. Table S3. Patterns used on the identification of alleles from *SFBB1*, *SFBB2*, *SFBB3*, *SFBB5*, *SFBB6*, *SFBB7*, *SFBB8*, *SFBB9*, *SFBB11*, *SFBB13*, and *SFBB14* genes in the segregation experiment.

Gene	Characterized alleles with specific primers	Primers	Restriction enzymes	Belgium5S17	Belgium5S20	Belgium6S2	Belgium6S10
SFBB1	*S2-SFBB1** *S17-SFBB1* *S20-SFBB1*	SFBB1F + SFBB1R	*Nla*III	52;58;75;129;328	52;58;75;129;328	52;58;129;403	n.a.
SFBB2	*S10-SFBB2** *S20-SFBB2**	SFBB2F + SFBB2-2R	*Dde*I	n.a	42;300;363	n.a	159;246;300
SFBB3	*S2-SFBB3* *S10-SFBB3* *S17-SFBB3** *S20-SFBB3**	SFBB3F + SFBB3R	*Bse*XI	145;443	588	588	588
			*Mae*III	588	247;341	588	588
SFBB5	*S2-SFBB5** *S10-SFBB5* *S17-SFBB5*	SFBB5Belg6S2F+SFBB5Belg6S2F		n.a	n.a	893	n.a
	*S20-SFBB5**	SFBB5Belg5S20F+SFBB5Belg5S20R		n.a	650	n.a	n.a
SFBB6	*S2-SFBB6** *S10-SFBB6*	SFBB6Belg6S2F+ SFBB6Belg6S2R		n.a	n.a	438	n.a
	*S17-SFBB6**	SFBB6F + SFBBgenR	*Ava*I	780	304;476	780	780

	S20-SFBB6						
SFBB7	*S2-SFBB7*,	SFBB7F + SFBB7-1R	*Dde*I	264;525	35;264;490	n.a	n.a.
	*S10-SFBB7**	SFBB7F + SFBB7-2R	*Sau*3AI	52;227;335	52;227;335	n.a	52;161;174;227
	*S17-SFBB7**						
	*S20-SFBB7**						
SFBB8	*S2-SFBB8**	SFBB8Belg6S2F+SFBB8Belg6S2R		n.a	n.a	779	n.a
	S10-SFBB8			-	-	-	-
	*S17-SFBB8**	SFBB8Belg5S17F+SFBB8Belg5S17R		783	n.a	n.a	n.a
	*S20-SFBB8**	SFBB8Belg5S20F+SFBB8Belg5S20R		n-a	560	n.a	n.a
SFBB9	*S2-SFBB9**	SFBB9F + SFBB9R	*Sau*3AI	257;322	579	89;168;322	89;490
	*S10-SFBB9**						
	*S17-SFBB9**						
	*S20-SFBB9**						
SFBB11	*S10-SFBB11**	SFBB11F + SFBB11R	*Aci*I	93;186	279	n.a	279
	*S17-SFBB11**		*Rsa*I	47;232	47;88;144	n.a	47;232
	*S20-SFBB11**						
SFBB13	*S2-SFBB13**	SFBB13F + SFBB13R	*Nco*I	417	n.a	204;213	n.a
	*S10-SFBB13**		*Pvu*I	200;217	n.a	417	n.a
SFBB14	*S2-SFBB14**	SFBB14F + SFBB14R	*Apo*I	42;51;57;339	42;93;152;244	42;51;396	42;51;396
	*S10-SFBB14**		*Mfe*I	72;99;318	72;417	72;99;318	99;388

*S17-SFBB14** *S20-SFBB14**	*Nla*III	489	67;422	67;422	67;422

* alleles that could be followed in the segregation experiment

Supp. Table S4. Polymorphism at the amino acid sites under positive selection between *S22* and *Sa*-haplotypes

Gene		25	42	47	52	89	91	147	149	179	197	212	220	236	266
SFBB1	*S22*	M	N	D	P	F	E	I	T	E	T	E	C	T	Q
	Sa	.	.	.	.	.	.	.	.	.	.	.	.	.	.
SFBB2	*S22*	V	M	D	R	H	S	T	Q	M	T	D	N	S	L
	Sa	.	.	.	.	.	.	.	.	.	.	.	.	.	.
SFBB3	*S22*	L	F	D	R	P	Q	T	H	E	T	S	P	T	N
	Sa	.	.	.	.	.	E	.	.	.	.	T	.	.	E
SFBB5	*S22*	I	V	D	Q	N	E	I	K	E	M	D	P	C	K
	Sa	.	.	.	.	.	.	.	.	.	.	.	.	.	.
SFBB6	*S22*	V	V	D	R	N	K	L	K	K	T	D	P	N	N
	Sa	.	.	.	.	.	.	.	.	.	.	.	.	.	.
SFBB7	*S22*	M	V	D	Q	N	E	T	K	R	P	E	P	Y	E
	Sa	.	.	.	.	.	D	.	.	G	T	.	.	.	K
SFBB8	*S22*	V	A	E	Q	E	E	T	K	G	M	K	P	C	K
	Sa	.	.	.	.	.	.	.	.	.	.	.	.	.	.
SFBB9	*S22*	V	M	D	Y	P	Q	T	E	E	T	K	Q	N	K
	Sa	.	.	.	.	.	.	.	.	.	.	.	.	.	.
SFBB11	*S22*	V	A	D	Q	F	L	S	Q	E	A	T	S	T	R
	Sa	.	.	.	.	.	.	N	.	.	T	.	.	.	.
SFBB13	*S22*	M	A	D	P	F	Q	I	G	Q	M	E	H	I	E
	Sa	.	.	.	.	.	.	.	.	.	.	.	.	.	.
SFBB14	*S22*	I	M	D	Y	P	Q	I	G	E	I	K	P	S	K
	Sa	.	.	.	.	.	.	S	.	.	.	E	.	.	.