

**Table S1.** Isolates characterised using STRAf typing and sequence analysis of genes encoding CSP and CYP51A. Product sizes (bp) are presented for STRAf markers 2A, 2B, 2C, 3A, 3B, 3C, 4A, 4B and 4C.

Isolate <sup>1</sup>	Origin	Location	Year	CYP51A variant	2A	2B	2C	3A	3B	3C	4A	4B	4C	CSP type
Air teb1	Air	Netherlands	2018	TR <sub>34</sub> /L98H/T289A/G448S	188	123	158	136	163	82	180	185	226	t02?
HPPb-1*	Air	UK	2018	TR <sub>34</sub> /L98H	192	143	175	202	160	94	188	201	166	t02
BTta-1*	Air	Netherlands	2018	TR <sub>46</sub> /Y121F/M172I/T289A/G448S	194	146	164	187	163	82	200	181	226	t01
Air carb5	Air	Netherlands	2018	wt	194	143	164	202	160	85	180	185	266	t02
BKCb-1*	Air	Netherlands	2018	TR <sub>46</sub> /Y121F/T289A/S363P/I364V/G448S	194	143	164	238	166	97	196	181	182	t01
V094-26	Patient	Netherlands	2010	TR <sub>46</sub> /Y121F/T289A	163	143	164	214	160	94	196	181	182	t01
CXH_07	Patient	UK		TR <sub>34</sub> /L98H	171	149	171	187	169	91	180	209	246	t04A
ASP251	Patient	Germany		TR <sub>34</sub> /L98H/S297T/F495I	171	123	158	199	160	82	180	185	226	t02
OKH50	Patient	Japan		TR <sub>34</sub> /L98H	171	146	156	202	160	82	180	185	226	t02
ARAF017	Patient	Netherlands		TR <sub>34</sub> /L98H	171	143	173	202	166	94	180	201	226	t04A
ARAF013	Patient	Netherlands		TR <sub>34</sub> /L98H/S297T/F495I	171	143	156	229	160	97	180	185	226	t11
D007	Patient	Taiwan		TR <sub>34</sub> /L98H/S297T/F495I	181	135	164	196	240	94	180	185	166	t04A
CYP_15_38	Patient	Belgium		TR <sub>46</sub> /Y121F/T289A	182	146	173	232	160	94	180	185	182	t09
ASP267	Patient	Germany		TR <sub>34</sub> /L98H	182	123	164	247	163	91	180	173	190	t11
CXH_06	Patient	UK		TR <sub>34</sub> /L98H	182	123	164	284	163	97	180	181	190	t04B
CYP_15_63	Patient	Belgium		TR <sub>34</sub> /L98H/S297T/F495I	188	123	158	223	172	94	196	185	186	t01
ASP168	Patient	Germany		TR <sub>34</sub> /L98H	188	146	171	376	169	85	215	181	186	t04B
CYP_15_46	Patient	Belgium		TR <sub>34</sub> /L98H	192	143	156	208	160	94	180	185	166	t02
ASP164	Patient	Germany		TR <sub>34</sub> /L98H	192	125	164	382	160	88	180	185	178	t11
CYP_15_2	Patient	Belgium		TR <sub>46</sub> /Y121F/T289A	194	143	164	205	160	97	196	181	226	t01
CYP_15_7	Patient	Belgium		TR <sub>46</sub> /Y121F/T289A	194	146	158	208	166	130	180	201	186	t01
V093-54	Patient	Netherlands	2009	TR <sub>46</sub> /Y121F/T289A	194	146	158	208	166	130	180	201	186	t01
CYP_15_80	Patient	Belgium		TR <sub>46</sub> /Y121F/T289A	194	143	156	235	160	82	180	185	226	t02
AF65*	Reference	UK	1997	wt	171	143	164	214	160	94	180	185	230	t02
WT-NL*	Reference	Netherlands	<2014	wt	188	141	169	262	166	85	200	181	166	t01
08-19-02-10*	Reference	Netherlands	2008	TR <sub>34</sub> /L98H	192	152	164	364	160	91	180	185	190	t04B

TR34-NL*	Reference	Netherlands	<2014	TR <sub>34</sub> /L98H	192	152	164	364	160	91	180	185	190	
TR46-NL*	Reference	Netherlands	<2014	TR <sub>46</sub> /Y121F/T289A	194	146	164	187	160	124	203	181	182	
AF293*	Reference	UK	1993	F46Y/M172V/N248T/D255E/E427K	194	139	175	247	195	133	192	185	178	t06A
F2-B4	Soil	France	2016	F46Y/M172V/E427K	163	131	160	160	166	109	176	165	166	t07
UK5-A9	Soil	UK	2016	F46Y/M172V/E427K	163	137	160	178	172	127	176	165	170	t08
BB1-2.2-A4	Soil	UK	2015		169	146	162	202	211	88	188	181	178	t18A
PG3-8	Soil	UK	2015	wt	171	143	156	214	160	94	180	185	226	t02
SS8-7A*	Soil	Belgium	2015	TR <sub>34</sub> /L98H	182	146	171	343	169	97	215	189	230	t11
G5-C5	Soil	Germany	2016	wt	188	141	171	436	169	115	215	181	186	t13
RN8-18*	Soil	UK	2016	TR <sub>34</sub> /L98H	192	152	164	364	160	91	180	185	190	t04B
PG3-4	Soil	UK	2015		196	139	169	130	166	156	253	185	178	
F5-C6*	Soil	France	2016	F46Y/M172V/E427K	163	132	160	160	172	106	176	165	166	t15
BB1-3-B9*	Soil	UK	2015	F46Y/M172V/E427K	163	133	160	160	172	88	176	165	170	t02*
G1-A9*	Soil	Germany	2016	F46Y/M172V/E427K	163	134	160	160	172	88	176	165	170	t02*
SS5-7C*	Soil	Austria	2015	F46Y/M172V/E427K	163	135	160	160	172	124	176	165	170	t08
BB6-8-A9	Soil	UK	2015	F46Y/M172V/E427K	163	135	162	160	172	106	176	165	170	t08
BB6-8-C7*	Soil	UK	2015	F46Y/M172V/E427K	163	133	160	166	169	100	176	165	170	t19
UK2-B4*	Soil	UK	2016	F46Y/M172V/E427K	163	133	160	187	166	88	176	165	166	t08
RS3-3*	Soil	UK	2016	TR46/Y121F/T289A	163	143	156	235	160	94	196	185	226	t02
WN19-3*	Soil	UK	2016	TR46/Y121F/T289A	163	141	164	244	160	216	180	185	186	t01
SS10-10A	Soil	Netherlands	2015	wt	169	148	158	136	163	85	180	181	222	t02
G2-C1	Soil	Germany	2016	wt	169	143	160	136	163	94	180	181	226	t05
BB1-3-C8	Soil	UK	2015	wt	169	123	158	178	166	85	180	181	234	t11
BB1-2.2-B1*	Soil	UK	2015	wt	169	147	162	202	211	88	188	181	178	t18A
BB1-2.2-A10	Soil	UK	2015	wt	169	148	162	202	211	88	188	181	178	t18A
UK5-B5*	Soil	UK	2016	TR <sub>34</sub> /L98H	171	143	156	202	160	94	180	185	190	t02
UK5-C4	Soil	UK	2016	wt	171	143	162	217	160	85	180	185	194	t02
PG2-6	Soil	UK	2015	D262Y	173	143	158	136	163	82	180	185	186	t05
SS7-2A	Soil	Germany	2015	L27I	173	141	166	150	163	124	180	185	166	t03
SS5-2A*	Soil	Austria	2015	D262Y	179	127	158	136	163	100	180	185	174	t05

PG1-5	Soil	UK	2015	wt	179	127	171	187	163	127	180	177	166	t03
PG2-10*	Soil	UK	2015	wt	179	127	156	190	163	118	184	181	166	t04B
BB6-8-C10	Soil	UK	2015	wt	179	127	156	193	163	127	184	181	166	
PG3-9	Soil	UK	2015	wt	179	127	156	196	163	136	184	181	178	t04A
SS10-6A*	Soil	Netherlands	2015	TR <sub>34</sub> /L98H	182	146	171	157	169	85	216	241	282	t11
BB6-8-B1*	Soil	UK	2015	D262Y	182	141	156	217	175	130	184	181	166	t03
WN28-6*	Soil	UK	2016	TR <sub>46</sub> /Y121F/T289A	182	143	168	256	160	175	180	181	182	t01
F3-C6	Soil	France	2016	wt	184	148	175	187	163	109	184	197	178	t03
SSB8-9A	Soil	Belgium	2015	wt	184	123	162	217	200	94	216	241	166	t05
G2-B8	Soil	Germany	2016	wt	188	150	179	217	192	140	207	185	178	t10
BB1-8-A2	Soil	UK	2015	wt	188	143	169	220	166	85	219	249	166	t04A
BB1-8-A5	Soil	UK	2015	wt	192	143	158	136	163	94	180	185	186	t05
PG3-6	Soil	UK	2015	wt	192	143	156	208	160	88	180	185	230	t06A
F1-B1	Soil	France	2016	wt	192	141	171	134	169	184	176	181	186	t13
BB1-8-A7	Soil	UK	2015	wt	194	148	177	190	160	136	188	181	166	t01
PG3-3*	Soil	UK	2015	wt	196	139	169	130	166	159	253	185	178	t01
T8-2	Tulip bulbs	UK	2015	wt	169	127	185	160	172	139	188	185	166	t11
T2-4	Tulip bulbs	Netherlands	2015	wt	179	141	162	153	163	175	180	181	166	t03
T4-1	Tulip bulbs	Netherlands	2015	F46Y/M172V/E427K	163	137	160	160	166	104	176	165	170	t08
T6-1	Tulip bulbs	UK	2015	F46Y/M172V/E427K	163	133	160	184	166	127	176	165	166	t13
T1-3	Tulip bulbs	Netherlands	2015	wt	169	143	160	133	163	94	180	181	226	t05
T11-8	Tulip bulbs	Netherlands	2017	TR <sub>34</sub> /L98H	171	143	158	202	160	94	180	185	258	t02
T11-B2	Tulip bulbs	Netherlands	2017	TR <sub>34</sub> /L98H	171	143	158	202	160	94	180	185	262	t02
T6-5	Tulip bulbs	UK	2015	wt	171	143	164	238	160	85	180	193	308	t02
T5-8	Tulip bulbs	Netherlands	2015		177	127	162	150	163	130	180	177	166	
T3-3	Tulip bulbs	Netherlands	2015	TR <sub>34</sub> /L98H	182	146	171	343	169	97	215	189	230	t11
T3-6	Tulip bulbs	Netherlands	2015	TR <sub>34</sub> /L98H	182	146	171	343	169	97	215	189	230	t11
T5-3	Tulip bulbs	Netherlands	2015	TR <sub>34</sub> /L98H	182	146	171	343	169	97	215	189	230	t11
T10-5	Tulip bulbs	UK	2015	TR <sub>34</sub> /L98H	182	146	171	343	169	97	215	189	230	t11
T2-8	Tulip bulbs	Netherlands	2015	TR <sub>34</sub> /L98H	182	146	171	343	169	97	215	189	230	t11

T1-2	Tulip bulbs	Netherlands	2015	TR <sub>34</sub> /L98H	182	146	171	343	169	97	215	189	230	t11
T6-3	Tulip bulbs	UK	2015	TR <sub>34</sub> /L98H	182	146	171	343	169	97	215	189	230	t11
T4-7	Tulip bulbs	Netherlands	2015	TR <sub>34</sub> /L98H	182	146	171	343	169	97	215	189	230	t11
T2-1	Tulip bulbs	Netherlands	2015	TR <sub>34</sub> /L98H	182	148	171	343	169	97	215	189	230	t11
T10-6	Tulip bulbs	UK	2015		188	143	169	220	166	85	219	249	166	
T9-2	Tulip bulbs	UK	2015	wt	188	141	177	550	160	118	168	189	186	t01
T1-4	Tulip bulbs	Netherlands	2015	wt	190	123	156	172	160	85	208	181	202	t06B
T5-6	Tulip bulbs	Netherlands	2015	wt	192	143	164	208	160	85	180	185	234	t02
T4-10	Tulip bulbs	Netherlands	2015	TR <sub>46</sub> /Y121F/T289A	194	146	164	187	160	124	203	181	182	t01
T5-1	Tulip bulbs	Netherlands	2015	TR <sub>46</sub> /Y121F/T289A	194	146	164	187	160	124	203	181	182	t01
T5-2	Tulip bulbs	Netherlands	2015	TR <sub>46</sub> /Y121F/T289A	194	146	164	187	160	124	203	181	182	t01
T3-5	Tulip bulbs	Netherlands	2015	TR <sub>46</sub> /Y121F/T289A	194	146	164	187	160	124	203	181	182	t01
T7-9	Tulip bulbs	UK	2015	TR <sub>46</sub> /Y121F/T289A	194	146	164	187	160	124	203	181	182	t01
T5-5	Tulip bulbs	Netherlands	2015	TR <sub>46</sub> /Y121F/T289A	194	146	164	187	160	124	203	181	182	t01
T4-9	Tulip bulbs	Netherlands	2015	TR <sub>46</sub> /Y121F/T289A	194	146	164	187	160	124	203	181	182	t01
TP UT4A-1	Tulip peel waste	Netherlands	2018	TR <sub>46</sub> /Y121F/T289A	194	146	164	187	160	124	203	181	182	t01
TP UT4B-2	Tulip peel waste	Netherlands	2018	TR <sub>46</sub> /Y121F/T289A	194	146	164	187	160	124	203	181	182	t01
TP UT5C-5	Tulip peel waste	Netherlands	2018	TR <sub>34</sub> /L98H	171	146	156	202	160	82	180	185	226	t02
TP UT1C-1	Tulip peel waste	Netherlands	2018	wt	182	152	162	226	172	159	224	181	166	t03
TP UT1B-1	Tulip peel waste	Netherlands	2018	TR <sub>34</sub> /L98H	182	143	164	324	160	94	180	185	166	t11
TP UT4B-1	Tulip peel waste	Netherlands	2018	TR <sub>34</sub> /L98H	182	143	164	324	160	94	180	185	166	t11
TP TEB5C-2	Tulip peel waste	Netherlands	2018	TR <sub>34</sub> /L98H/T289A/I364V/G448S	188	123	164	136	166	82	196	185	226	t02
TP UT5C-7	Tulip peel waste	Netherlands	2018	TR <sub>34</sub> /L98H	188	123	158	223	163	79	180	193	226	t02
TP UT1A-7	Tulip peel waste	Netherlands	2018	wt	188	141	169	262	166	85	200	181	166	t01
TP UT1A-2	Tulip peel waste	Netherlands	2018	TR <sub>34</sub> /L98H	192	146	171	157	169	91	180	241	190	t02
TP TEB5C-3	Tulip peel waste	Netherlands	2018	TR <sub>46</sub> /Y121F/T289A	192	143	158	244	160	97	180	185	182	t02
TP UT5B-9	Tulip peel waste	Netherlands	2018	TR <sub>46</sub> /Y121F/T289A??	194	123	164	202	160	82	180	201	182	t02
TP UT5B-3	Tulip peel waste	Netherlands	2018	TR <sub>46</sub> /Y121F/T289A	163	143	156	238	160	94	196	185	226	t02
STNL4-B6	Tulip soil	Netherlands	2016		163	133	160	184	166	127	176	165	166	
STNL6-B2	Tulip soil	Netherlands	2016	TR <sub>34</sub> /L98H	182	123	156	253	163	94	180	173	190	

STNL5-B6	Tulip soil	Netherlands	2016	TR <sub>34</sub> /L98H	188	146	164	355	160	85	188	181	230	t11
STNL5-C8	Tulip soil	Netherlands	2016	TR <sub>46</sub> /Y121F/T289A	194	146	158	208	166	130	180	201	186	
STNL2-C9	Tulip soil	Netherlands	2016	F46Y/M172V/E427K	163	135	160	157	172	130	176	165	166	t02*
STNL5-C5	Tulip soil	Netherlands	2016	TR <sub>34</sub> /L98H/S297T/F495I	171	123	158	202	160	82	180	201	226	t02
STNL6-B1	Tulip soil	Netherlands	2016	TR <sub>34</sub> /L98H	171	146	156	205	160	94	180	185	226	t01
STNL1-A8	Tulip soil	Netherlands	2016	wt	177	139	181	208	178	85	176	209	178	t04A
STNL2-B8	Tulip soil	Netherlands	2016	TR <sub>34</sub> /L98H	182	146	164	202	160	97	180	181	222	t04B
STNL6-A3	Tulip soil	Netherlands	2016	TR <sub>34</sub> /L98H	188	148	166	302	160	88	180	181	190	t01
STNL5-B7	Tulip soil	Netherlands	2016	TR <sub>46</sub> /Y121F/T289A	192	143	164	244	160	82	196	185	182	t02
STNL3-C8	Tulip soil	Netherlands	2016	TR <sub>34</sub> /L98H	192	143	164	343	163	94	180	181	166	t04B
STNL5-C1	Tulip soil	Netherlands	2016	TR <sub>46</sub> /Y121F/T289A	194	135	160	208	160	104	180	201	186	t06A

<sup>1</sup> Isolates marked with asterisk have been characterised in previous study [17]