

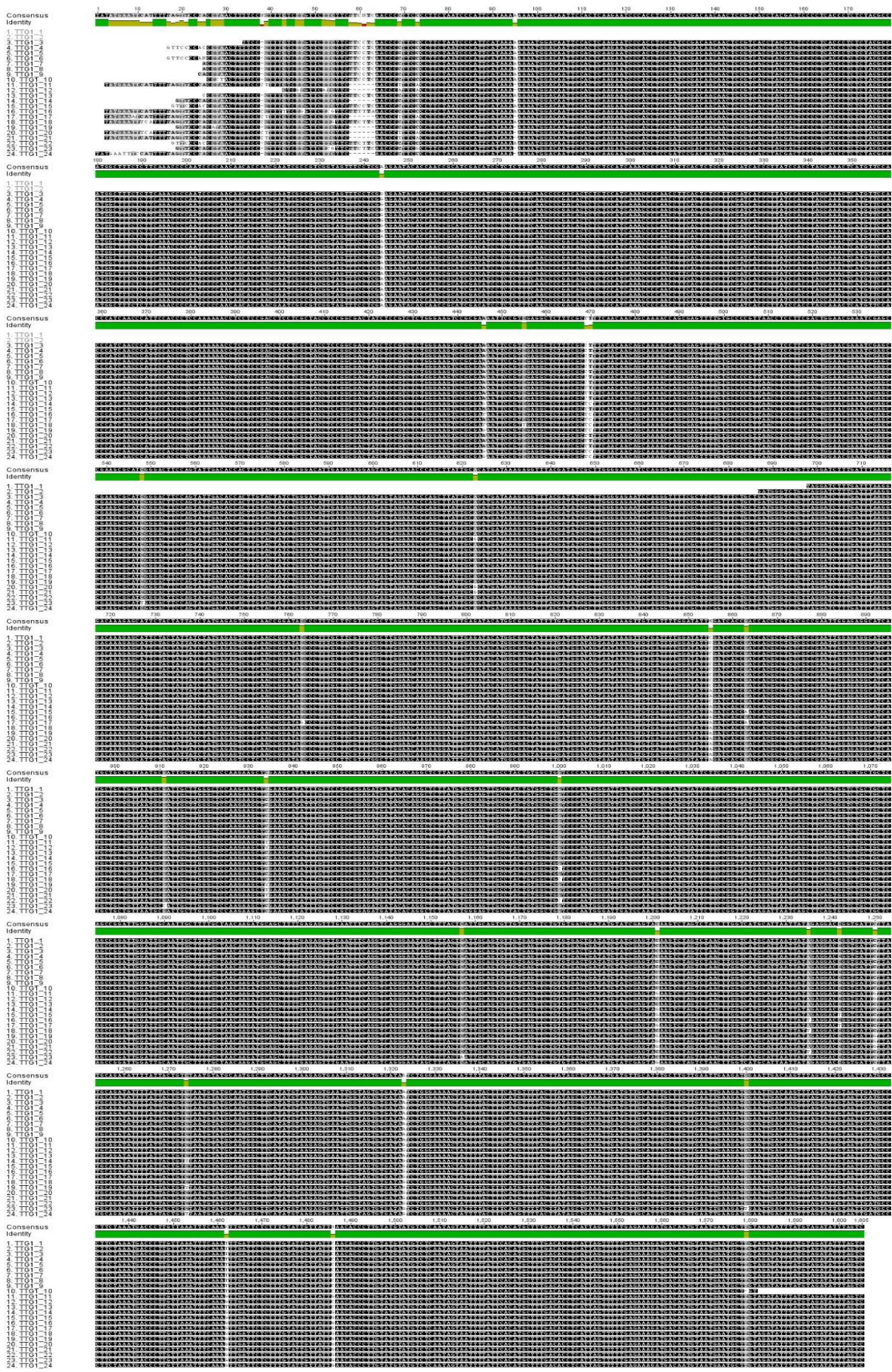
Characterization and diagnostic marker for *TTG1* regulating tannin and anthocyanin biosynthesis in faba bean

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Supplementary Fig. S1 Multiple alignments of the VfTTG1 sequences from 24 faba bean lines Consensus identity corresponds to the faba bean lines listed in Table 2.



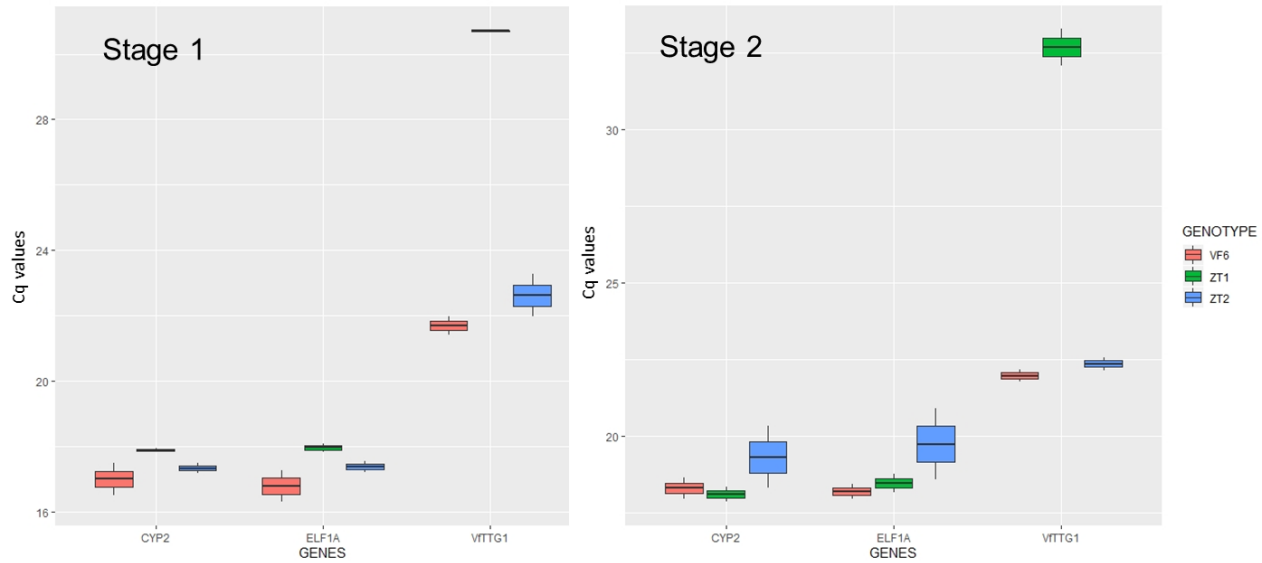
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Supplementary Fig. S2 Quantification cycle (Cq) values of *VfTTG1*, *CYP2* and *ELF1A* in the faba bean samples VF6 (line 15), ZT1 (line3), ZT2 (line 13) at two different developmental stages (stage1: immature flowers and stage2: young flowers). The expression levels are shown as median (lines), 25 to 75 percentile (boxes) and range (whiskers).



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Supplementary Table S1. Phenotypes for tannin content/flower color and genotypes in the faba bean set A including 49 lines.

ID_lines	Faba bean lines	Phenotype ^e	Genotype ^f
1	ALBUS ^a	zt1	C:C
2	E0T0V ^a	zt1	C:C
3	AD 23 MAINTENEUR_2300 ^a	T	A:A
4	G 58 MAINTENEUR_2302 ^a	T	A:A
5	GLORIA_2308 ^a	zt1	C:C
6	19 TB OT_2316 ^a	zt1	C:C
7	DIVINE_2391 ^a	T	A:A
8	MELODIE_2393 ^a	T	A:A
9	LADY_2401 ^a	T	A:A
10	19 TB T_2317 ^a	T	A:A
11	FABIOLA OT_2318 ^a	zt1	C:C
12	FABIOLA T_2319 ^a	T	A:A
13	POUILLY_2327 ^a	T	A:A
14	DIVA_2366 ^a	T	A:A
15	DISCO_2390 ^a	zt2	A:A
16	MAXIME_196 ^a	T	A:A
17	AQUITAINE_267 ^a	T	A:C
18	GERS_277 ^a	T	A:A
19	LORRAINE_279 ^a	T	A:A
20	PICARDIE_437 ^a	T	A:A
21	DIANA_455 ^a	T	A:A
22	MIKKO_1179 ^a	T	A:C
23	TICOL_1191 ^a	T	A:A
24	STRUBE_1216 ^a	T	A:C
25	OPTICA_1482 ^a	zt1	C:C
26	BOURDON_1505 ^a	T	A:A
27	TROY_1579 ^a	T	A:A
28	COTE D'OR_1626 ^a	T	A:C
29	ASCOTT_1777 ^a	T	A:A
30	SORAVI_2070 ^a	T	A:C
31	BLANDINE_2073 ^a	zt1	C:C
32	POLLEN_2074 ^a	zt1	C:C
33	MAYA_2077 ^a	T	A:A
34	PUNCH_2067 ^a	T	A:C
35	WIZZARD ^a	T	A:A
36	GLORIA_5 ^a	zt1	C:C
37	GL 101-04 ^b	zt1	C:C
38	GL 102-04 ^b	zt1	C:C
39	GL 103-04 ^b	zt2	A:A

40	GL 105-04 ^b	zt2	A:A
41	GL 106-04 ^b	zt1	C:C
42	GL 107-04 ^b	zt1	C:C
43	MXD_12 ^c	zt2	A:A
44	MXD_13 ^c	zt2	A:A
45	MXD_23 ^c	zt2	A:A
46	WXD_51 ^c	zt2	A:A
47	VF6 ^d	T	A:A
48	ZT1 ^d	zt1	C:C
49	ZT2 ^d	zt2	C:C

^a Origin : Line 1, provided by Dr. O'Sullivan (U. Reading); line 36, provided by Dr. Link (U. Gottingen); lines 2 to 35 derive from the EUFABA project and have been provided by Dr. Duc (INRA)

^b Advances breeding lines provided by IFAPA

^c White flowered F₂ individuals carrying the *zt-2* gene, derived from crosses between MAYA_2077 x DISCO_2390 (MxD) and WIZZARD x DISCO_2390 (WxD) and developed by IFAPA

^d Parental lines provided by IFAPA

^e T: genotype with tannin. zt1: genotype with zero tannin content carrying the *zt-1* gene. zt2: genotype with zero tannin content carrying the *zt-2* gene.

^f Genotypic segregation of the KASP-TTG1 assay designed in this study

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Supplementary Table S2. Phenotype for tannin content and flower color and genotype data in faba bean set B (33 F₂ individuals from cross MAYA_2077 x EB0T0V)

	ID_lines	Tannin ^a	Flower color ^b	Genotype ^c
1	MAYA_2077	T	A	A:A
2	EB0T0V	zt1	B	C:C
3	MxE063	T	H	A:C
4	MxE066	T	A	A:A
5	MxE067	zt1	B	C:C
6	MxE068	T	H	A:C
7	MxE069	T	H	A:C
8	MxE070	T	A	A:A
9	MxE071	zt1	B	C:C
10	MxE072	T	H	A:C
11	MxE073	T	H	A:C
12	MxE074	zt1	B	C:C
13	MxE075	zt1	B	C:C
14	MxE076	zt1	B	C:C
15	MxE077	T	H	A:C
16	MxE078	T	H	A:C
17	MxE080	T	H	A:C
18	MxE086	T	H	A:C
19	MxE088	T	H	A:C
20	MxE090	T	H	A:C
21	MxE091	T	H	A:C
22	MxE092	T	H	A:C
23	MxE093	T	H	A:C
24	MxE094	T	A	A:A
25	MxE096	T	H	A:C
26	MxE097	T	H	A:C
27	MxE098	T	A	A:A
28	MxE099	T	H	A:C
29	MxE100	zt1	B	C:C
30	MxE101	zt1	B	C:C
31	MxE103	T	H	A:C
32	MxE105	T	H	A:C
33	MxE106	T	A	A:A
34	MxE107	zt1	B	C:C
35	MxE108	T	A	A:A

^a T: genotype with tannin. zt1: genotype with zero tannin content carrying the *zt-1* gene

^b Phenotypic segregation of the flower color. (A): homozygous for normal flower (standard and keel petals white, wing petals white with a black spot); (B): homozygous for white flower; (H) heterozygous genotypes (spotted flower)

^c Genotypic segregation of the KASP_TTG1 assay designed in this study