

<i>Pisum sativum</i>	1 MEGFHPMSMNSNNMNPSEYTFPITATASGAIDNTIITIITYN-TTSTTPNMWSRISWKLPPILLDR IAFLPPPAFFRARAVKREYSLLFSNSFLELYLQVSPRF-WFTFFKHK
<i>Lotus japonicus</i>	1 MEGFHPMSMTMSPFPYTFPISAGGI6VGVGVGGSNLITPTCTATGTYNNTPNWWSRISWKLPPILLDRVIAFLP IAFFRARSVKRIVYSLLFNSTFLELYLQSPRH-WFTFFKHK
<i>UFO_A.thaliana</i>	1 MDSTVFIVPSLTLPESYFTS-SNSSTTTTSDSSGOMMDCRISWKLPPILLDRVIAFLP IAFFRARSVKRIVYSLLFNSTFLELYLQSPRH-WFTFFKHK
<i>A. majus</i>	1 TEAFDTPIFNLPPLPVGFTI-TPXTINLONDINISTTPMDCRISWKLPPILLDRVIAFLP IAFFRARSVKRIVYSLLFNSTFLELYLQSPRH-WFTFFKHK
<i>O. sativa</i>	1 MEANSPPRKKR-SRDKNRKEPNPSLSTEEDQEWSEFPGL-EIVVARPVAULFRFIVCNWYSMSSSFSDOYSEMPOLPWFYTITEN
<i>S. latifolia</i>	1 METFSPSSILPPYNSTLPNVIAFTPSSFTIATVSTIITTTMETTTTPWMDSRISWRSPOLDRILACLPPPAFFRARSVCKRIVYALLFSNTFLDLYLQWORNFWTFEPKX

F box

<i>Pisum sativum</i>	118 TRSKTHIYKIN—TITDNNSFEGYIFDPNEAVYRISFAELIPSOFSPSSSSAGLLCWSDESGPKHILLSNPILGSITQLPPTLRPRLFPSIGLTITPSSIDVTAAGDDWISP
<i>Lotus japonicus</i>	119 TRNYTYKNNNN—NIITGSAGTASCEGYLFDPNEAVYRISFAELIPPSOFSPASSAAGLLCWSDESGPKHILLSNPILGSITQLPPTLRPRLFPSIGLTITPSCIDVTVAGDDWISP
<i>UFO_A.thaliana</i>	108 TLASVLYKGG—TNDDDSKAECFLFDPMETMYRLSFAVTPSPGFPSSGGLVSNSSEEALKTHILLNPPLGSVSQLPPISPRFLPSIGLSVTPTSIDVTVAGDDWISP
<i>A. majus</i>	104 SIAHLYNNIS—TNAERPNTYEGYLFDPMETMYRLSFAVTPSPGFPSSGGLVSNSSEEALKTHILLNPPLGSVSQLPPISPRFLPSIGLSVTPTSIDVTVAGDDWISP
<i>O. sativa</i>	96 —ASNNVAIYDPSLKHHFPSVPLAKIVIPVASAAGLVCILDLIS-HNFYDNPLOSLKEIPRS—VQAW-RVAVG-VNGCTSNEG
<i>S. latifolia</i>	118 PNTNMNIIYRDNPTEDHNCGSCSPNSTDAYLFDPYEVKWHVISPPLIPGFSPPASSGCLTCWISDE2PKVUFLINPLVGSITQLPPTLRPRLFPSIGLITPSSIDVTAAGDDWISP

<i>Pisum sativum</i>	229 YAVKNLSESFSFHIDASGFYSIWTTSPLRCLSLESGRMVYSC—GKFYCMNCSPFVSLAYDIAINTNFKIQAPMRFLRSPNLVEKG-XLIIVAAVEKSKLNVPKSLRWSLQ
<i>Lotus japonicus</i>	235 YAVKNLSESFSFHIDOGFYSIWTTSPLRCLSLESGRMVYSC—GKFYCMNCSPFVSLAYDIAINTNFKIQAPMRFLRSPNLVEKG-XLIIVAAVEKSKLNVPKSLRWSLQ
<i>UFO_A.thaliana</i>	220 YAVKNLSESFSFHIDOGFYSIWTTSPLRCLSLESGRMVYSC—GKFYCMNCSPFVSLAYDIAINTNFKIQAPMRFLRSPNLVEKG-XLIIVAAVEKSKLNVPKSLRWSLQ
<i>A. majus</i>	215 YAVKNLSESFSFHIDOGFYSIWTTSPLRCLSLESGRMVYSC—GKFYCMNCSPFVSLAYDIAINTNFKIQAPMRFLRSPNLVEKG-XLIIVAAVEKSKLNVPKSLRWSLQ
<i>O. sativa</i>	182 YAVKNLSEFHGDONGYEVYDDNNKNTSCPDIFPPSILPLUNLNFNSOPVAVGSMLYDPCAEIEGVLSDYD101WQFVIPUPLHDTHLAEIQC—RNVLVLLCQL—AATC/CWELOK
<i>S. latifolia</i>	237 YAVKNLSEFHGDONGYEVYDDNNKNTSCPDIFPPSILPLUNLNFNSOPVAVGSMLYDPCAEIEGVLSDYD101WQFVIPUPLHDTHLAEIQC—RNVLVLLCQL—AATC/CWELOK

Probe for ISH

<i>Pisum sativum</i>	342 CGSVVWEIERNPQOLYQFADMEGNGFECVGNGEFIVIMIKG—SDKOLVYDGRKRKWWPPCPYAG—YDGFEHLHGFADEPRLATPVTALLDQLALPPO—
<i>Lotus japonicus</i>	346 CGTINWEIERNPQOLYQFAEIEGGNGFECVGNGEFIVIMIKG—TDKALLYDLVRKRWWPPCPYAG—YDGFEHLHGFADEPRLATPVTALLDQLALPPO—
<i>UFO_A.thaliana</i>	333 DNATWIEIERNPQOLYQDOFAAEEGNGFECVGNGEFIVILRG—ISLQLELFDIVRKRWWPPCPYPSOSGGGSSGGSGEVYDGFADEPV—
<i>A. majus</i>	328 CGTINWEIERNPQOLYQFAEIEGGNGFECVGNGEFIVILRG—YDKAVMFDORQINWPPCPYPSOSGGGSSGGSGEVYDGFADEPV—
<i>O. sativa</i>	297 MTLLVKEWORMPNLNC-EFYG—KHKMKTCGNSGLMAMSLKRNMLVLYLNGKWDXPDCMLPCS—RKKKIAAGCAAGCP SALA—
<i>S. latifolia</i>	351 CGTINWEIERNPQOLYQFEEIEGGNGFECVGNGEFIVIMIKG—TKOLLEDFEKRWWPPCPYPSOSGGGSSGGSGEVYDGFADEPV—

Figure S1. SIUFO amino acid sequence and alignment of its homolog genes in other plant species. The highlighted square indicates a homologous amino acid conserved among UFOs. The F-box and probe region for in situ hybridization (ISH) are indicated with blue and red line, respectively.

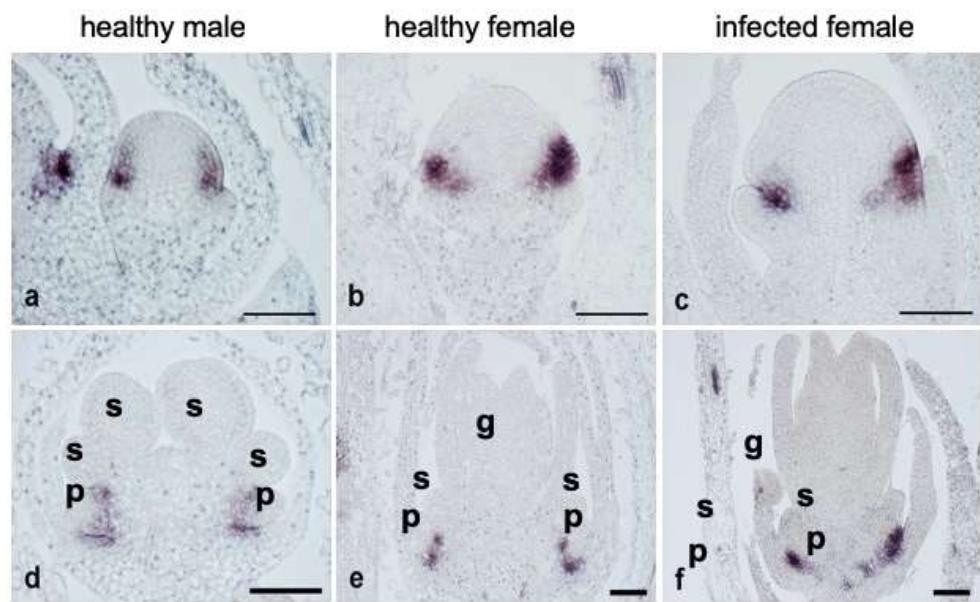


Figure S2. In situ hybridization analysis of *SIUFO* mRNA in *S. latifolia* flowers at an early flower development stage. (a) Healthy male flower, (b) healthy female flower, and (c) *Microbotryum* infected female flower at stage 2; (d) Healthy male flower at stage 8 (e) healthy female flower and (f) *Microbotryum* infected female flower at stage 7. g, gynoecium; p, petal; s, stamen. Bars = 100 μ m.

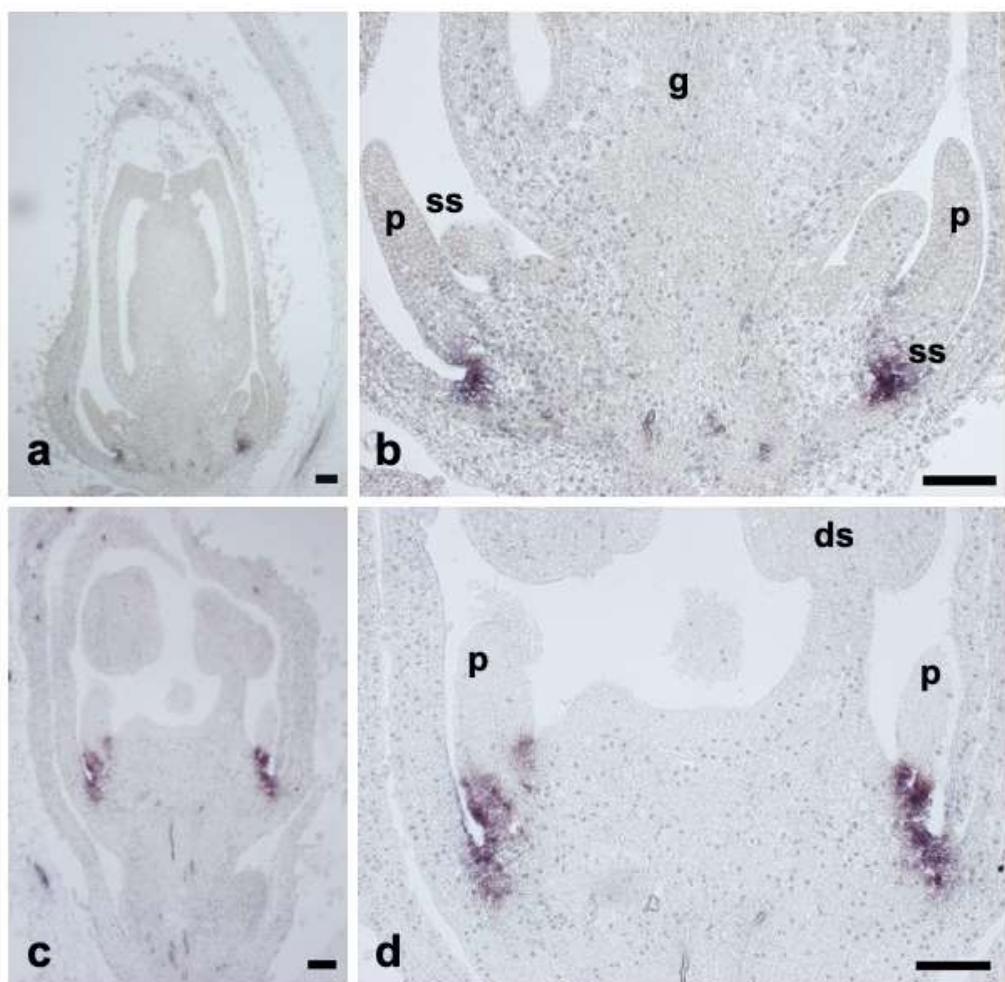


Figure S3. In situ hybridization analysis of *SLUFO* mRNA in *S. latifolia* flowers at a late flower development stage. (a) Female flower at stage 12 and (b) higher magnification. (c) Hermaphroditic flower resulted from *Microbotryum* infection at stage 12, and (d) higher magnification. g, gynoecium; p, petal; ds, developing stamen; ss, suppressed stamen. Bars = 100 μ m.

Table 1. List of oligonucleotide primers used in this study.

Number	Name	Sequence (5'-3')	Reference
1	R2ALS1363(+)	GCGAGGCACTCCTTA	ALSV manual
2	R2ALS1551(-)	GCAAGGTGGTCTGTGA	ALSV manual
3	ALSV-2600F	AGTGCTTCCACTCGTTTAC	This study
4	ALSV-3000R	GTAGCATGACCACTCATGAT	This study
5	ALSR2-1213(+)	ATACCACCTCATACAGGTACAC	Kasajima et al. 2017
6	ALSR2-1484(-)	CGTTCCACGACCGTGTGCCAGA	Kasajima et al. 2017
7	SIPDSF1	ACCCGAGGAATGGAAAGAGA	This study
8	SIPDSF2	TGCTGAAAAGTAGATGGTCTGTATGT	This study
9	SIUFO_F2	CAATGCACACATGGCAAAT	This study
10	SIUFO_R2	CAAACCCCTTCCTCCTTCA	This study
11	SISUPF4	CCG ACG ATC ATG GAA TCA TCA AGA	Kazama et al. 2009
12	SISUPR3	CCA AGA CGA AGC TCC AAA TCC A	Kazama et al. 2009
13	SI18SF1	GGC AAC GGA TAT CTC GCC TCT C	Kazama et al. 2009
14	SI18SR1	TGA CGC CCA GGC AGA CGT GC	Kazama et al. 2009
15	SL_UBQ F	AATTTCGCCTCCTCATCC	Zemp et al. 2014
16	SL_UBQ R	GCTTGCCAGCGAAAATAAGT	Zemp et al. 2014
17	atPDS_1070F	ACCGACGAGGTGTTATTGG	This study
18	atPDS_1809R	CGACATGGTTCACAGTTGG	This study
19	SIPDS-100F	GGCCCTGATTCACAgtcgacCAGGAGAACATGGTTCC	This study
20	SIPDS-200R	CCCTGACCTTCTAGCACGGatccACGAGAGTTAACGCTTCATTCACC	This study
21	SIPDS-250R	CCCTGACCTTCTAGCAGGGatccCACACTCCATCCTCGTCAACTC	This study
22	SIPDS-150F	GGCCCTGATTCACAgtcgacAGGCTGTGCATGCCATTG	This study
23	SIPDS-300R	CCCTGACCTTCTAGCAGGGatccATAAGCATCTCCTTTATCTCTTTTC	This study
24	SIPDS-200F	GGCCCTGATTCACAgtcgacGGTGAAGTGAAGCTTAACCTCGT	This study
25	ALSV-sal-SIUFO_1029F	GGCCCTGATTCACAgtcgacACATGGTGGAAAATCCAAGC	This study
26	ALSV-sal-SIUFO_1159F	GGCCCTGATTCACAgtcgacGATTGTGGTCCCTACAAGGATG	This study
27	ALSV-sal-SIUFO_1245F	GGCCCTGATTCACAgtcgacGAAGGAGGAAGAGGGTTG	This study
28	ALSV-bam-SIUFO_1190R	CCCTGACCTTCTAGCAGGGatccTTGGGTCCCACATCCTGTAG	This study
29	ALSV-bam-SIUFO_1290R	CCCTGACCTTCTAGCAGGGatcc TAATAAACTCACCATTCCAACAC	This study

30	ALSV-bam-SIUF0_1418R	CCCTGACCTTCTAGCAGggatccTGCAAATCCATGCAAATCA	This study
31	ALSV-sal-SISUP_310F	GGCCCTGATTCACAGtcgacCCAAACCCTAACCTAACCT	This study
32	ALSV-sal-SISUP_331F	GGCCCTGATTCACAGtcgacAATCCAAACCTAGCTCAAATCTT	This study
33	ALSV-sal-SISUP_406F	GGCCCTGATTCACAGtcgacTCACTCTCACTTCCCTCTTCCA	This study
34	ALSV-bam-SISUP_441R	CCCTGACCTTCTAGCAGggatccCAATGGAGGTGGGAAGAGA	This study
35	ALSV-bam-SISUP_507R	CCCTGACCTTCTAGCAGggatccTTTCCATTCCCTATCCCATC	This study

Materials and Methods

Isolation of SlUFO

SlUFO partial sequence was obtained from cDNA prepared from male and female total RNA flower buds. A genomic DNA fragment and the complete coding region was obtained using above partial sequence.

In Situ Hybridization

Paraffin-sections of flower buds were prepared as described previously (Kazama et al. 2009). In situ hybridizations were performed using the probe shown in Figure 1. The procedure was applied accordingly to the previous report (Kazama et al. 2009).

Reference

- 1 Kazama, Y.; Fujiwara, M.T.; Koizumi, A.; Nishihara, K.; Nishiyama, R.; Kifune, E.; Abe, T.; Kawano, S. A SUPERMAN-like gene is exclusively expressed in female flowers of the dioecious plant *Silene latifolia*. *Plant Cell Physiol.* **2009**, *50*, 1127–1141.