

Supplementary Material

Genome-wide analysis of OVATE family proteins in cucumber (*Cucumis sativus* L.)

Appendix A. Detailed information about cucumber lines.

lines	Group	Ovary at anthesis (cm)	mature fruit (cm)	Origin
R461	East Asian	4.7	35.0	China
17S-199	East Asian	5.4	44.2	China
17S-140	East Asian	5.1	42.6	China
17S-27	East Asian	3.7	29.0	China
17S-114	East Asian	3.5	28.0	China
17S-63	Eurasian	2.2	9.0	Russian Federation
17S-65	Eurasian	1.8	8.0	Russian Federation

Appendix B. List of primers used in this paper.

Primers for cloning

CsOFP12-16c-F 5'-ATGTCCAATCTCAAATTCCTCAA-3'

CsOFP12-16c-R 5'-TTATCGAGACGTAACAACCTTTTCG-3'

Primers for construction of over-expression

CsOFP12-16c-F 5'-GACTCTAGAGGATCCATGTCCAATCTCAAATTCCTCAA-3'

CsOFP12-16c-R 5'-ACCACCCGGGATCCTTATCGAGACGTAACAACCTTTTCG-3'

Primers for qRT-PCR and semi-quantitative PCR

qCsOFP1a-F 5'-ACTCCAATCCAACGATGCCTACT-3'

qCsOFP1a-R 5'-GGATTCAGCAGTTGTGTGGCAG-3'

qCsOFP1b-F 5'-ATTCTCCGCTTGAACCACCC-3'

qCsOFP1b-R 5'-GAAAATGACGGCGTTGGGAT-3'

qCsOFP5a-F 5'-TATGAAGGCAGAGGAAAGCGA-3'

qCsOFP5a-R 5'-TCCTTCCTTATGTAGAGTGGTTGTC-3'

qCsOFP5b-F 5'-ATGTCATGGTGTATTTTTGAGGTA-3'

qCsOFP5b-R 5'-TCAGTCGAACTCCAGTTTACTTTTC-3'

qCsOFP6-19a-F 5'-CGAAATCTCCAACCTCACTTCCCT-3'

qCsOFP6-19a-R 5'-AGAAGCGATGATGATGATGGTT-3'

qCsOFP6-19b-F 5'-CTCATCAACACCATCTCCGTCG-3'

<i>qCsOFP6-19b-R</i>	5'-TCGGAGTAGGAGGATGGGGA-3'
<i>qCsOFP6-19c-F</i>	5'-CGTCCAACCTGACAAGAAACC-3'
<i>qCsOFP6-19c-R</i>	5'-ATGCTGTCGCCGATGAGAA-3'
<i>qCsOFP8a-F</i>	5'-CACGCCTATTCCAATCCTCAT-3'
<i>qCsOFP8a-R</i>	5'-GGGAGATAATGGGAGAAGAGGC-3'
<i>qCsOFP8b-F</i>	5'-GGAGATTCCGTTCAAGCCCCT-3'
<i>qCsOFP8b-R</i>	5'-CTTTCACTTTCCCTTCAACGG-3'
<i>qCsOFP10-F</i>	5'-TTGAAGGCGAATGGCTACG-3'
<i>qCsOFP10-R</i>	5'-CTTCCAATTTCTCAGGTACAAC-3'
<i>qCsOFP12-16a-F</i>	5'-TCCTCTCTCCACCGCTCAAT-3'
<i>qCsOFP12-16a-R</i>	5'-AATCGACTGCAACATAGGCG-3'
<i>qCsOFP12-16b-F</i>	5'-GACCTCGTTGTTTATTTGCTGG-3'
<i>qCsOFP12-16b-R</i>	5'-CTGTTTGAGTTGATATTGTGCGG-3'
<i>qCsOFP12-16c-F</i>	5'-CCACCCTCCGATTGCTACTT-3'
<i>qCsOFP12-16c-R</i>	5'-CGAGATGGAGTCGTCAGCG-3'
<i>qCsOFP13a-F</i>	5'-CGTCATGTCGTCAGCCAAGG-3'
<i>qCsOFP13a-R</i>	5'-GGAGAGAGTGAAGAAGGAGTCGG-3'
<i>qCsOFP13b-F</i>	5'-ACTCTCTCATTCCGCTCCCA-3'
<i>qCsOFP13b-R</i>	5'-TCCGTTTCAACCGAATCAATAG-3'
<i>qCsOFP13c-F</i>	5'-TCTTGGTTCGCTACCTCCTCTC-3'
<i>qCsOFP13c-R</i>	5'-TCCACCTTCTTCTACGCCTCTG-3'
<i>qCsOFP13d-F</i>	5'-TTCGTCACCCTAACAACATCTT-3'
<i>qCsOFP13d-R</i>	5'-GCCTCAATTTGGTCTTCATCAT-3'
<i>qCsOFP14-F</i>	5'-AGTCGCCGAATCCGTCAGAG-3'
<i>qCsOFP14-R</i>	5'-CTCTTCCATAAACTCCCAATCCACT-3'
<i>qCsOVATE-F</i>	5'-ACGGAGAGCGGTTTATTCAGC-3'
<i>qCsOVATE-R</i>	5'-GGTTTCTCCCGTATGGTTTCC-3'
<i>qCsUBI-F</i>	5'-CACCAAGCCCAAGAAGATC-3'
<i>qCsUBI-R</i>	5'-TAAACCTAATCACCACCAGC-3'
<i>qAtSTY1-F</i>	5'-CGTGAGAGACAACAGCAATTAG-3'
<i>qAtSTY1-R</i>	5'-TACAGCTGTTTGGTAAGCAAAC-3'
<i>qAtYUC4-F</i>	5'-CATCTCCTACGTTGAGTCCTAC-3'
<i>qAtYUC4-R</i>	5'-CTTGCGTCTTCACATCCATAG-3'
<i>qAtNGA3-F</i>	5'-TCCTATTATAACACCAGCGTC-3'

<i>qAtNGA3-R</i>	5'-TCTATAACCAACGGCTCTGATC-3'
<i>qACTIN-F</i>	5'-CCTTCGTCTTGATCTTGCGG-3'
<i>qACTIN-R</i>	5'-AGCGATGGCTGGAACAGAAC-3'
Primer for genotyping	
<i>35S-F</i>	5'-GACGCACAATCCCCTATCC-3'
<i>CsOFP12-16c-R</i>	5'-TTATCGAGACGTAACAACCTTTTCG-3'

Appendix C. *CsOFPs* in cucumber.

Gene name	Locus	AA	MW	pI	Ai	GRAVY
<i>CsOFP1a</i>	Csa4G332100	335	37645.82	9.81	59.7	-0.83
<i>CsOFP1b</i>	Csa3G730160	343	38805.87	9.72	68.78	-0.75
<i>CsOFP5a</i>	Csa6G520290	468	54428.71	9.56	59.96	-1.1
<i>CsOFP5b</i>	Csa6G512880	168	19565.09	6.1	59.17	-0.83
<i>CsOFP6-19a</i>	Csa6G454390	134	14614.68	5.94	88.58	-0.23
<i>CsOFP6-19b</i>	Csa3G778370	167	18645.44	9.47	82.93	-0.24
<i>CsOFP6-19c</i>	Csa1G168910	171	19037.15	6.08	62.69	-0.65
<i>CsOFP8a</i>	Csa2G004680	239	27797.88	10.17	60.79	-0.82
<i>CsOFP8b</i>	Csa1G246610	246	28243.16	10.37	54.31	-0.9
<i>CsOFP10</i>	Csa2G361530	270	31054.62	9.56	64.67	-0.74
<i>CsOFP12-16a</i>	Csa7G388340	278	30864.3	5.03	57.27	-0.55
<i>CsOFP12-16b</i>	Csa3G146670	205	23132.74	5.87	65.61	-0.42
<i>CsOFP12-16c</i>	Csa7G234150	197	22247.98	6.9	69.34	-0.4
<i>CsOFP13a</i>	Csa3G778360	234	25887.09	5.47	64.15	-0.36
<i>CsOFP13b</i>	Csa5G613560	277	30991.13	5.2	65.78	-0.59
<i>CsOFP13c</i>	Csa6G046300	227	25959.19	4.7	74.27	-0.42
<i>CsOFP13d</i>	Csa6G454380	285	31987.15	4.34	66.39	-0.54
<i>CsOFP14</i>	Csa7G446730	249	27516.44	5.35	56.83	-0.89
<i>CsOVATE</i>	Csa4G038760	301	34470.15	9.06	61.53	-0.84

Note: AA (the number of amino acid) MW (molecular weight) pI (Theoretical pI)
Ai (Aliphatic index) GRAVY (Grand average of hydrophobicity)