

Table S1. Primer list used in the study.

primer name	primer sequence
DsRed T-de F	5' GTTCCTGAGCGGCCGCATGT 3'
DsRed T-de R	5' GGCCGCTCAGGAACAGGTGG 3'
cDNA DsRed T-de F	5' GTTCCTGTAGCGGCCGCATGT 3'
cDNA DsRed T-de R	5' GGCCGCTACAGGAACAGGTGG 3'
OsSUMO7 F	5' TGCCTTCCATCGTTGTGTTG 3'
OsSUMO7 R	5' CCATATCAACTTCAGCAGATTCC 3'
RT- OsSUMO7 F	5' GGGTTGATTGATGGTGGTGG 3'
RT- OsSUMO7 R	5' GTGAAACGGAGGAAGTAGCTC 3'

Table S2. OsSUMO & AtSUMO Amino Acid and Atomic composition.

	AC					TNA	AAC																	NAA			
	C*	H*	N*	O*	S*		A	R	N	D	C	Q	E	G	H	I	L	K	M	F	P	S	T		W	Y	V
OsSUMO1	464	744	138	153	7	1506	9	6	4	9	2	5	9	13	2	4	8	7	5	4	3	3	3	0	1	3	100
OsSUMO2	471	756	138	156	5	1526	8	5	4	9	1	6	8	12	2	5	8	8	4	4	4	6	3	0	1	3	101
OsSUMO3	542	834	156	173	4	1709	10	11	0	11	0	5	10	14	1	2	7	4	4	5	2	2	8	2	5	7	110
OsSUMO4	532	859	145	176	5	1717	10	5	1	11	3	6	6	9	1	7	8	7	2	4	6	7	11	0	2	8	114
OsSUMO5	545	858	142	164	10	1719	5	6	1	11	1	3	5	10	2	6	7	6	9	7	6	4	10	0	3	8	110
OsSUMO6	657	995	183	195	4	2034	11	11	2	7	0	5	12	16	1	3	9	5	4	5	6	5	9	6	5	8	130
OsSUMO7	492	795	127	146	5	1565	2	2	3	8	2	1	9	12	3	3	17	9	3	3	3	4	3	2	0	11	100
AtSUMO1	462	740	140	158	6	1506	8	6	5	11	1	6	7	12	2	4	7	7	5	4	2	5	4	0	1	3	100
AtSUMO2	578	903	159	177	6	1823	8	6	5	11	2	6	8	10	2	5	10	9	4	9	3	4	6	1	1	6	116
AtSUMO3	550	866	154	170	7	1747	8	6	5	13	2	6	6	9	2	5	11	9	5	5	4	5	1	1	3	5	111
AtSUMO4	586	939	173	185	5	1888	4	11	3	9	0	3	12	9	3	4	8	10	5	5	2	10	6	1	3	9	117
AtSUMO5	524	844	148	164	8	1688	6	5	3	4	2	4	8	7	4	4	7	10	6	2	5	11	8	0	5	7	108
AtSUMO6	588	934	170	175	7	1874	2	11	3	8	1	4	10	8	2	4	7	10	6	7	3	8	7	2	2	9	114
AtSUMO7	478	756	136	145	6	1521	6	6	2	11	2	6	4	4	4	10	4	7	4	5	5	6	3	0	2	4	95
AtSUMO8	498	782	138	150	5	1573	2	6	4	8	1	3	8	6	4	6	8	8	4	7	3	8	3	0	2	6	97

AC Atomic composition; C* Carbon; H* Hydrogen; N* Nitrogen; O* Oxygen; S* Sulfur; TNA Total number of atoms; AAC Amino acid composition; A Alanine; R Arginine; N Asparagin; D Aspartic; C Cysteine; Q Glutamin; E Glutamic; G Glycine; H Histidine; I Isoleucine; L Leucine; K Lysine; M Methionine; F Phenylalanine; P Proline; S Serine; T Threonine; W Tryptophan; Y Tyrosin; V Valine; NAA Number of amino acids.

A Alanine; R Arginine; N Asparagin; D Aspartic; C Cysteine; Q Glutamin; E Glutamic; G Glycine; H Histidine; I Isoleucine; L Leucine; K Lysine; M Methionine; F Phenylalanine; P Proline; S Serine; T Threonine; W Tryptophan; Y Tyrosin; V Valin

(OsSUMO7)₂

Table S3. OsSUMO and AtSUMO composition of amino acid by percentage.

	A	R	N	D	C	Q	E	G	H	I	L	K	M	F	P	S	T	W	Y	V
OsSUMO1	9.00%	6.00%	4.00%	9.00%	2.00%	5.00%	9.00%	13.00%	2.00%	4.00%	8.00%	7.00%	5.00%	4.00%	3.00%	3.00%	3.00%	0.00%	1.00%	3.00%
OsSUMO2	7.90%	5.00%	4.00%	8.90%	1.00%	5.90%	7.90%	11.90%	2.00%	5.00%	7.90%	7.90%	4.00%	4.00%	4.00%	5.90%	3.00%	0.00%	1.00%	3.00%
OsSUMO3	9.10%	10.00%	0.00%	10.00%	0.00%	4.50%	9.10%	12.70%	0.90%	1.80%	6.40%	3.60%	3.60%	4.50%	1.80%	1.80%	7.30%	1.80%	4.50%	6.40%
OsSUMO4	8.80%	4.40%	0.90%	9.60%	2.60%	5.30%	5.30%	7.90%	0.90%	6.10%	7.00%	6.10%	1.80%	3.50%	5.30%	6.10%	9.60%	0.00%	1.80%	7.00%
OsSUMO5	4.50%	5.50%	0.90%	10.00%	0.90%	2.70%	4.50%	9.10%	1.80%	5.50%	6.40%	5.50%	8.20%	6.40%	5.50%	3.60%	9.10%	0.00%	2.70%	7.30%
OsSUMO6	8.50%	8.50%	1.50%	5.40%	0.00%	3.80%	9.20%	12.30%	0.80%	2.30%	6.90%	3.80%	3.10%	3.80%	4.60%	3.80%	6.90%	4.60%	3.80%	6.20%
OsSUMO7	2.00%	2.00%	3.00%	8.00%	2.00%	1.00%	9.00%	12.00%	3.00%	3.00%	17.00%	9.00%	3.00%	3.00%	3.00%	4.00%	3.00%	2.00%	0.00%	11.00%
AtSUMO1	8.00%	6.00%	5.00%	11.00%	1.00%	6.00%	7.00%	12.00%	2.00%	4.00%	7.00%	7.00%	5.00%	4.00%	2.00%	5.00%	4.00%	0.00%	1.00%	3.00%
AtSUMO2	6.90%	5.20%	4.30%	9.50%	1.70%	5.20%	6.90%	8.60%	1.70%	4.30%	8.60%	7.80%	3.40%	7.80%	2.60%	3.40%	5.20%	0.90%	0.90%	5.20%
AtSUMO3	7.20%	5.40%	4.50%	11.70%	1.80%	5.40%	5.40%	8.10%	1.80%	4.50%	9.90%	8.10%	4.50%	4.50%	3.60%	4.50%	0.90%	0.90%	2.70%	4.50%
AtSUMO4	3.40%	9.40%	2.60%	7.70%	0.00%	2.60%	10.30%	7.70%	2.60%	3.40%	6.80%	8.50%	4.30%	4.30%	1.70%	8.50%	5.10%	0.90%	2.60%	7.70%
AtSUMO5	5.60%	4.60%	2.80%	3.70%	1.90%	3.70%	7.40%	6.50%	3.70%	3.70%	6.50%	9.30%	5.60%	1.90%	4.60%	10.20%	7.40%	0.00%	4.60%	6.50%
AtSUMO6	1.80%	9.60%	2.60%	7.00%	0.90%	3.50%	8.80%	7.00%	1.80%	3.50%	6.10%	8.80%	5.30%	6.10%	2.60%	7.00%	6.10%	1.80%	1.80%	7.90%
AtSUMO7	6.30%	6.30%	2.10%	11.60%	2.10%	6.30%	4.20%	4.20%	4.20%	10.50%	4.20%	7.40%	4.20%	5.30%	5.30%	6.30%	3.20%	0.00%	2.10%	4.20%
AtSUMO8	2.10%	6.20%	4.10%	8.20%	1.00%	3.10%	8.20%	6.20%	4.10%	6.20%	8.20%	8.20%	4.10%	7.20%	3.10%	8.20%	3.10%	0.00%	2.10%	6.20%

(OsSUMO7)₃

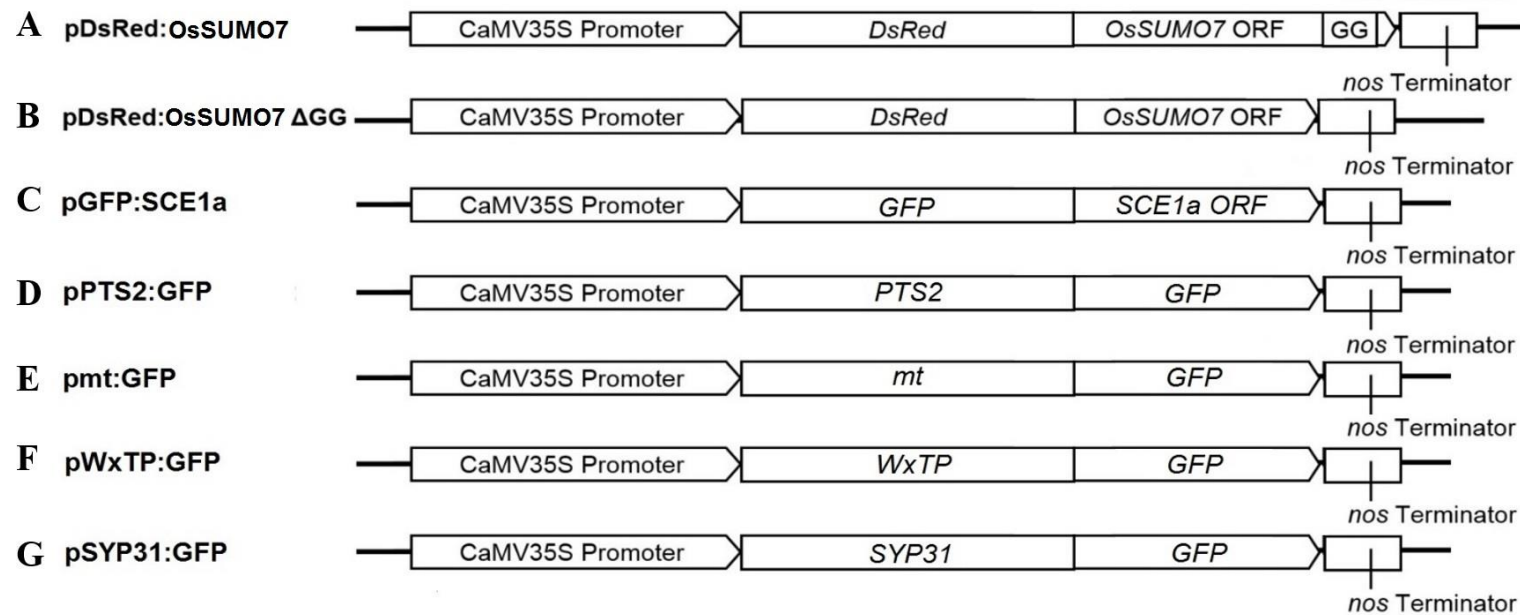


Figure S1. A) Construction of expression plasmid harboring OsSUMO7 gene. B) Construction of expression plasmid harboring OsSUMO7 gene with GG Deletion. C) Construction of expression plasmid harboring SCE1a gene. D) Construction of expression plasmid PTS2:GFP. E) Construction of expression plasmid mt:GFP. F) Construction of expression plasmid WxTP:GFP. G) Construction of expression plasmid SYP31:GFP.