Appendix A The primers used in cloning genes

Name	Gene	Sequences (5′to 3′)
GmPhyL21-F	Glyma18g02810	ATGGCTTTTGTTCTGCTAATATTACTTTC
GmPhyL21-R		GCAAGTTCATTTTTAGGGTACTTATCACC
MYB30-F	At3g28910	ATGGTGAGGCCTCCTTGTTGTG
MYB30-R		GCGAAGAAATTAGTGTTTTCATCC
SUMO1-F	At4g26840	ATGTCTGCAAACCAGGAGGAAG
SUMO1-R		GCAGTCTGATGGAGCATCGCATCG

Appendix B Recombinant binary plasmids used in soybean callus array

Binary plasmid	Host vector	Resistance in callus	Promoter	ORF	*A. tumefaciens*	Reference
pCAMBIA-*GUS*	pCAMBIA3301	Glufosinate	*35S*	GUS	EHA105	This study
pGREEN-*LUC*	pGREEN	Glufosinate	*AlcA*	LUC	EHA105	This study
pEGAD-*AHL22*	pEGAD	Glufosinate	*35S*	At2g45430-GFP	EHA105	This study
vx-cb	pFGC19	Glufosinate	*35S*	Vacuole-CFP	GV3101	This study
mt-cb	pFGC19	Glufosinate	*35S*	Mitochondria-CFP	EHA105	This study
pGWB-*GmPhyL21*	pGWB5	Glufosinate	*35S*	GmPAP02-GFP	EHA105	This study
pCAMBIA-*GUS*	pCAMBIA1301	Hygromycin	*35S*	GUS	LBA4404	Liu et al., 2013
pEGAD-*GmSARK*	pEGAD	Hygromycin	*GVG*	SARK	LBA4404	Liu et al., 2013
pEARLYGATE-*AtMYB30*	pEARLYGATE103	Glufosinate	*35S*	AtMYB30-GFP	EHA105	This study
pGWB-*AtSUMO1*	pGWB20	Hygromycin	*35S*	AtSUMO1-Myc	EHA105	This study

Appendix C The different soybean genotypes were implemented in the soybean callus assays

Cultivar	Longitude	Latitude	Altitude	Cultivar	Longitude	Latitude	Altitude
Tianlong 1	115°E	33°N	320 m	Heihe 45	107°E	50°N	300-800 m
Dongnong 50	130°E	47°N	50-70 m	Kennong 18	131°E	47°N	70-90 m
Beidou 40	126°E	48°N	320 m	KST1	105°E	27°N	500 m
Kenfeng 16	131°E	48°N	60-70 m	KST2	105°E	26°N	950-1200 m
Hefeng 43	131°E	47°N	70-90 m	KST3	105°E	27°N	1500 m
Heihe 21	107°E	50°N	300-800 m	KST4	105°E	27°N	1840 m
Heihe 35	107°E	50°N	300-800 m				