

**Supplementary Table 3 Genes involved in regeneration**

Route	Gene Abbreviations of gene	The full name of the gene	Classification
Somatic embryogenesis	MET1	Methyltransferase 1	DNA methylation
	CMT3	chromomethylase 3	
	DRMs	domains rearranged methyltransferase	
	PRC1/2	Potential Regeneration Cell 1/2	Histone modification
	PKL	PICKLE	
	HDACs	histone deacetylases	
	HATs	histone acetyltransferases	
	miR165/166	MicroRNAs 165/166	microRNAs
	HD-ZIR III	Homeodomain-Leucine Zipper III	Transcription factors
	BBM	BABYBOOM	
	TAA1	tryptophan aminotransferase of <i>Arabidopsis</i> 1	
	SERK	Somatic embryogenesis receptor-like kinase	
	WIND1	Wound-induced differentiation1	
	WUS	WUSCHEL	
	LEC1/2	Leafy Cotyledon 1/2	
	ABI3	abscisic acid insensitive	
	FUS3	Fusca 3	
	AGL15	agamous-like 15	
	WOX2/3	WUSCHEL HOMEobox	
	IAA30	indole-3-acetic acid 30	
YUCs	YUCCAs		
PIN	puroindoline		
AUX	auxin-response		
ARF	auxin response factors		
Type-B ARRs	type-B authentic response regulator		
Type-A ARRs	type-A authentic response regulator		
Pluripotent callus formation	PKL	PICKLE	Histone modification
	CLF	CURLY LEAF	
	JMJ30	Jumonji 30	
	GCN5	general control non-derepressible 5	
	ATXR2	Arabidopsis trithoprax-related 2	
	H3K36me3	histone 3 lysine 36 trimethylation 3	DNA methylation
	H3K27me3	histone 3 lysine 27 trimethylation 3	
	WRKY23	WRKYGOK 23	Transcription factors
	PLT1/2/3/7	Plethora 1/2/3/7	
	LBDs	lateral organ boundaries domains	
	bZIP59	basic leucine zipper 59	
	FAD-BD	FAD-BINDING BERBERINE	
	bHLH041	basic helix-loop-helix 041	
	SCR	SCARECROW	
	SHR	SHORTROOT	
	WOX5	WUSCHEL-RELATED HOMEobox 5	
ARF7/19	auxin response factors 7/19		
BBM	BABYBOOM		
TAA1	tryptophan aminotransferase of <i>Arabidopsis</i> 1		
ARR15	Arabidopsis response regulator 15		
ARF10	auxin response factors 10		
miR160	MicroRNAs 160	microRNAs	
De novo root organogenesis	YUCs	YUCCAs	Transcription factors
	WOX5/11/12	WUSCHEL-RELATED HOMEobox 5/11/12	
	EIN3	Ethylene insensitive 3	
	ARF7/19	auxin response factors 7/19	
	PLT1/2/3/5/7	Plethora 1/2/3/5/7	
LBD16	lateral organ boundaries domain16		

	miR156/165/166	MicroRNAs 156/165/166	microRNAs
De novo shoot organogenesis	AGO10	Argonaute 10	
	SPLs	SQUAMOSA promoter-binding protein-likes	
	Type-B ARRs	type-B authentic response regulator	
	Type-A ARRs	type-A authentic response regulator	
	HD-ZIR III	Homeodomain-Leucine Zipper III	
	ESR1/2	Erythrocyte Sedimentation Rate 1/2	
	WIND1/2	Wound-induced differentiation1	
	WUS	WUSCHEL	Transcription factors
	STM	shoot meristemless	
	PIN1	Pin-formed 1	
	CUC1/2	cup-shaped cotyledon 1/2	
	PLT3/5/7	Plethora 3/5/7	
	CLV3	WUS-clavata 3	
	HAC1	human artificial chromosome 1	
	YUCs	YUCCAs	
	MET1	Methyltransferase 1	
	CMT3	CKLF-like MARVEL 3	
DRM1/2	Domains Rearranged Methyltransferase 1/2	DNA methylation	
H3K9ac	histone 3 lysine 9 acetylation		
H3K4me3	histone 3 lysine 4 trimethylation 3		
H3K9me2	histone 3 lysine 9 trimethylation 2		