

Supplement Table S1. Growth stages and growth conditions applied for diploid 201-1 (A) and tetraploid 201-1-T (B) *D. officinale* used for transcriptome analysis

Samples	Growth stages	Growth conditions
AP	PLB of diploid in one month	½ MS basal medium, supplemented 6BA 0.5 mg·L ⁻¹ , 20% CW water (v/v) and AC 0.1 g·L ⁻¹ with pH 5.8; 25 ± 2°C under dark
BP	PLB of tetraploid in one month	
AD	Seedlings of diploid in six months	MS basal medium, supplemented 6BA 1.0 mg·L ⁻¹ , NAA 0.5 mg·L ⁻¹ , and AC 0.4 g·L ⁻¹ with pH 5.8 and were incubated at 25 ± 2°C under a 16/8h (light/dark) photoperiod with the light intensity of 35 µmol m ⁻² s ⁻¹
BD	Seedlings of tetraploid in six months	

Supplement Table S3. Primers used in qRT-PCR for 11 selected genes, *GAPDH* and *Actin* genes

Gene	Cluster	Primer sequence (5' - 3')		Number of nucleotides
<i>CLSA3-1</i>	Cluster-29035.190181	FW	TTCCCTCAAGTAGTGATTCCG	22
		RV	CCTTCACTCTCCCTGCCTCTA	21
<i>Doglgc1</i>	Cluster-29035.129201	FW	TCTTTGATTGTTGCGTTCTT	20
		RV	GGATACTGTGATGATGGGTGCT	22
<i>Doglgc3</i>	Cluster-29035.65822	FW	TGCGTCGCTACTGGTCTCTTA	22
		RV	GATACTGTGATGATGGGTGCTGA	23
<i>DoGMPP-1</i>	Cluster-29035.94132	FW	CGATCCAGGCTTCCTTCACT	20
		RV	TCCGACGAACTGAGCAAGAT	21
<i>DoGMPP-2</i>	Cluster-29035.108496	FW	GCCGTAGGTTTCGCACTTT	18
		RV	CAATGATGCTGCTTGAGACA	20
<i>DoGMPP-3</i>	Cluster-29035.122404	FW	TCTCTTCCATTACCACAACACCAT	24
		RV	ATAAAGTTCCACAAATCACACGCT	24
<i>Dogpml</i>	Cluster-29035.113664	FW	TGAAACGAGCACCTGGAC	18
		RV	AAGGAATAAATCTGGGAAACC	21
<i>DoMan2-2</i>	Cluster-29035.194335	FW	AACTCTGCGAACACCACCG	19
		RV	GCAACAGCCCACATCTACCC	20
<i>DoPGM1-1</i>	Cluster-29035.132552	FW	ACGCTTGTTGTTTCTGGG	18
		RV	AGCACCTGTAGCCTTGGA	18
<i>DoPGM1-2</i>	Cluster-29035.99595	FW	CGCCAACCTTCTTACCCT	18
		RV	TTACAGCAGCGGACAACC	18
<i>DoPMM2-1</i>	Cluster-29035.194251	FW	GAGGATGCCAGGGCTTATTGT	21
		RV	CCCTCCAACGACACCAACTG	20
<i>GAPDH</i>		FW	TAAGGCTGCTATAAAGGAAGAATC	24
		RV	GACCTGCTGTACCCCAAGAA	20
<i>Actin</i> (Zhang et al. 2016)		FW	TCCCAAGGCAAACAGAGAAA	20
		RV	GGCCACTAGCATATAGGGAAAG	22