

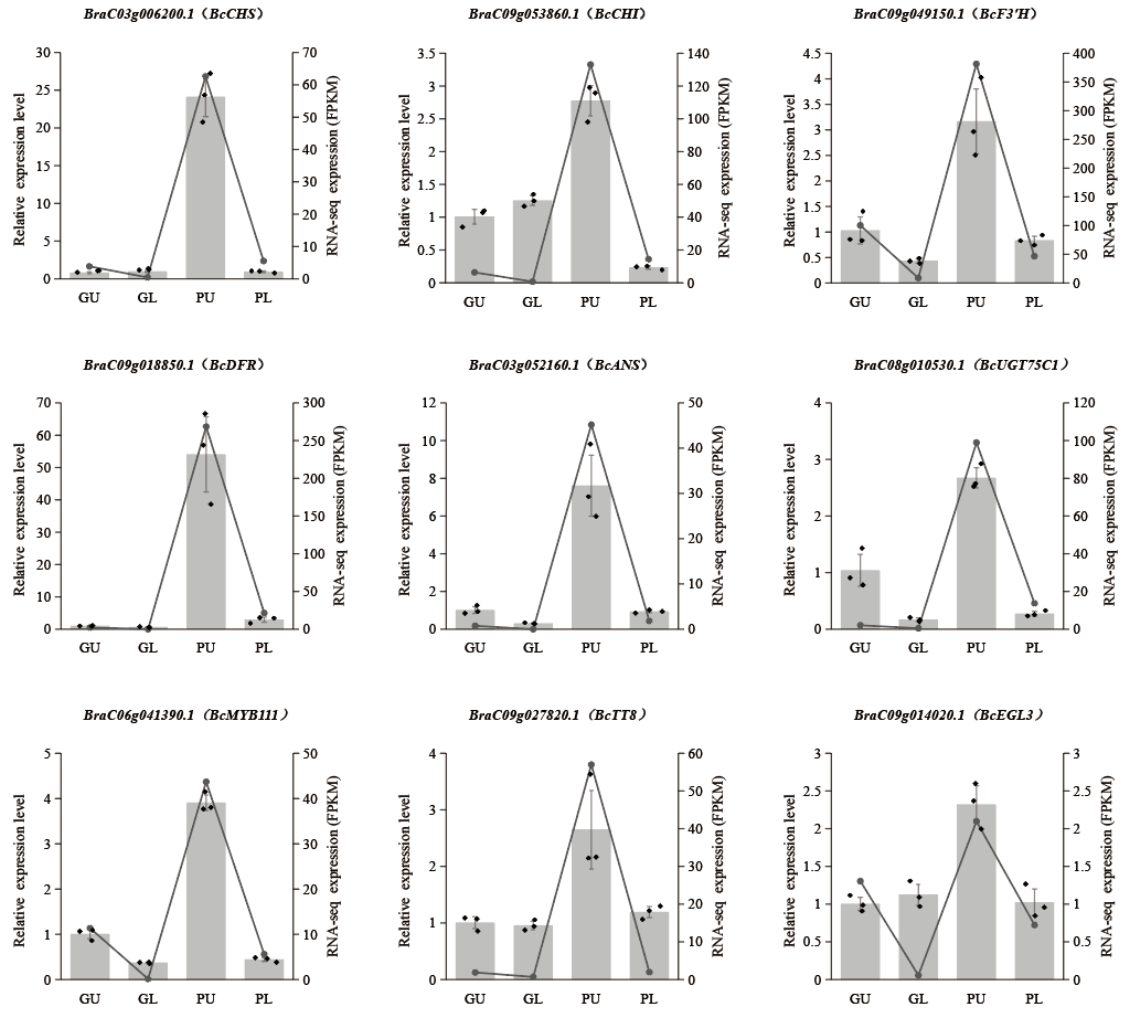
**Laser capture microdissection transcriptome (LCM RNA-seq) reveals *BcDFR* is a key gene in anthocyanin synthesis of Non-heading Chinese cabbage**

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**Fig. S1 Relative expression levels of genes involved in anthocyanin biosynthesis.**

Bar and line graphs represent the qRT-PCR and RNA-seq data, respectively. Scatter plots represent individual data values. Data are presented as mean  $\pm$  SD of three biological replicates.

a

ZBC genome ACCGAAGCTACATAGTAAACCTCTTCTCCAAAGCATAATCCATCTTTCCACACAAAGATGGTAGCTCACAAAGAGACCGGTGCGTAAAC 90  
LBC genome ACCGAAGCTACATAGTAAACCTCTTCTCCAAAGCATAATCCATCTTTCCACACAAAGATGGTAGCTCACAAAGAGACCGGTGCGTAAAC 90

ZBC genome GCGGCATCRAGGATTCATTGGTTCATGGCTCCTGATGCGGCTACTGGAAACGCTGTTATTTTGTCCGTGCCACTGTCGGCATCCTGGTACA 180  
LBC genome GCGGCATCRAGGATTCATTGGTTCATGGCTCCTGATGCGGCTACTGGAAACGCTGTTATTTTGTCCGTGCCACTGTCGGCATCCTGGTACA 180

ZBC genome TATCTTACAAACTCGTAAATTTCTCCGAGAGATAGTAAATAAGTAACTTACGAGTGTCTTGGCCGTAAAGGAAATTTGAAAGAACTC 270  
LBC genome TATCTTACAAACTCGTAAATTTCTCCGAGAGATAGTAAATAAGTAACTTACGAGTGTCTTGGCCGTAAAGGAAATTTGAAAGAACTC 270

ZBC genome CAACATCTTCTTGAATTTGCCAAACCGGAAGACCAACTCACITTTATGAAAGCCGATTTATCTGAGCAAGGAAGCTACGATGACGCCATA 360  
LBC genome CAACATCTTCTTGAATTTGCCAAACCGGAAGACCAACTCACITTTATGAAAGCCGATTTATCTGAGCAAGGAAGCTACGATGACGCCATA 360

ZBC genome AACGGATGGCAGCGGCTTTCCACATAGCAACTCCCATGGATTTTGAATCTAAGGACCCCGAGGTGAGTTACTACTGAACTTTTTTTA 450  
LBC genome AACGGATGGCAGCGGCTTTCCACATAGCAACTCCCATGGATTTTGAATCTAAGGACCCCGAGGTGAGTTACTACTGAACTTTTTTTA 450

ZBC genome TTACATATCAATCTTACAACTTTTGTAAATGAGTTTCTTCAATCAGAACCAACTGATAAAAACCGCAGTGAATGGACTGTTGGGAT 540  
LBC genome TTACATATCAATCTTACAACTTTTGTAAATGAGTTTCTTCAATCAGAACCAACTGATAAAAACCGCAGTGAATGGACTGTTGGGAT 540

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LBC genome AATGAAAGCATGTGATAAGGCCAAAGCCCTACGAAAGATTTGCTTACTTCTGCTGCGGAACGGTAAATGTTGAGGAACACCCAGAAAA 630

ZBC genome TGTCTATGATGAAAACGATTTGGAGTGAATTTGACTTTTATCATGTCCAAAGAAATGACAGGATGGTAAATATAATTAAGGATCATATATA 720  
LBC genome TGTCTATGATGAAAACGATTTGGAGTGAATTTGACTTTTATCATGTCCAAAGAAATGACAGGATGGTAAATATAATTAAGGATCATATATA 720

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LBC genome AAAATTAACCTGAGGTGATCTTCTCCAAAGTATTTATGTTTTGATAAATTTGTTGGCAGATGATTTTCATGTCGAAAACGTTAGCCGAC 810

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LBC genome AAACGAGCTTGGCATTACGCCAAGGAAAACGAATAGATTTTACTACTTATCCCGCATTTGGTATCGGTCGATTTTATAACCAACTCT 900

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LBC genome NTGGCGCTAGCCTTATACCGCGCTCTCTCTATACACCTGAGTGGCCCTACTTCTTATCCCTTTTTTTTTTAACTAAGAGGTTAA 990

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LBC genome TTTTCTCAATATGAATCTTTTGGAAAGCTTTGAAGGAGTGCATGACAATCAAAGACCATATGTTTCTGAGTCCCAAGAACCTGATTCAT 1350

ZBC genome ATGGGATTTAACTTCAAGTATAGTCTCGAGGATATGTTGGTGGAAATCGATGAGACATGTCGTCAAAAGGTTTCTCCCTGTCACCTTA 1440  
LBC genome ATGGGATTTAACTTCAAGTATAGTCTCGAGGATATGTTGGTGGAAATCGATGAGACATGTCGTCAAAAGGTTTCTCCCTGTCACCTTA 1440

ZBC genome CCGGAACATTTGAAATCTGAGGACAAAGTTCCGCGCAGTGAATGATAATTAAGGAGTAAACACGGATCTGCAGGTTTAACTGATGGTATC 1530  
LBC genome CCGGAACATTTGAAATCTGAGGACAAAGTTCCGCGCAGTGAATGATAATTAAGGAGTAAACACGGATCTGCAGGTTTAACTGATGGTATC 1530

ZBC genome GTAGCTTGTAAAGAACCCGAACAGGGATGCGCGGAGAAAAGCCGATAGTACATGTCGGCACAGCAGATCTGTGCTTAGAAAATGAAC 1620  
LBC genome GTAGCTTGTAAAGAACCCGAACAGGGATGCGCGGAGAAAAGCCGATAGTACATGTCGGCACAGCAGATCTGTGCTTAGAAAATGAAC 1620

ZBC genome CCGTATCAATATGGATCTATGCTTATCAATGTGATTTCTTTTTTGTCTTTTAACTTCTATGAAAGCTGTTCTGGACTTAT 1710  
LBC genome CCGTATCAATATGGATCTATGCTTATCAATGTGATTTCTTTTTTGTCTTTTAACTTCTATGAAAGCTGTTCTGGACTTAT 1710

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LBC genome TTTATGGTATATGATATCATGTTGAGTGTCTAAAAATATGAATCAATATTTAAATTAACCGTAAAAATGAAACCCGATATCTAATATGG 1800

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LBC genome ATCTATTTGCTTATGAAATGTGATTTGTTTTTTTGGTCTTTTTTAAAGTTGATGAAAGTGTGTTGACTTATTTATGGTATATGATA 1890

ZBC genome TCAATGTTGAGTGTGTAATAATATGAATCAATATTTAAATTAACCGTAAACGATGGCAGTGAATATATGAATCCGAAATACATA 1980  
LBC genome TCAATGTTGAGTGTGTAATAATATGAATCAATATTTAAATTAACCGTAAACGATGGCAGTGAATATATGAATCCGAAATACATA 1980

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LBC genome TGGATGATGATACAGTCTTACGGAAGTACAGGTTGTAATCAGGCTATATAACGAAAAAATATACCTCAACAGAAAAACAACTGAGC 2070

ZBC genome TTTCTATGGACCCACACACCACCTTTATAACTTTTACTTCCAAGCTACAGTCTTCTCGGAAATGCAATATTTCTTT 2146  
LBC genome TTTCTATGGACCCACACACCACCTTTATAACTTTTACTTCCAAGCTACAGTCTTCTCGGAAATGCAATATTTCTTT 2146

b

ZBC promoter TCTGCCACATCCGACAAATCAAGCTGTTTTTGGACAAATATATATGATATGGATAAACCCTATTTATGAGATAGITTTTGGCTGTGAGT 90  
LBC promoter TCTGCCACATCCGACAAATCAAGCTGTTTTTGGACAAATATATATGATATGGATAAACCCTATTTATGAGATAGITTTTGGCTGTGAGT 90

ZBC promoter AAGTCCATTAATAATGGTATAGACTTCACTGCTGAGTCTATCATATAATTTCCACATAAACACTTTCATACCTATATAGCATCTATA 180  
LBC promoter AAGTCCATTAATAATGGTATAGACTTCACTGCTGAGTCTATCATATAATTTCCACATAAACACTTTCATACCTATATAGCATCTATA 180

ZBC promoter AGTGGTTCATATTTGCTCTGCTATGCTGAGATGTTGGCTTGGCTGTTTCCACTGGACCATTTTCTACCCACATTTGAGAGGAAGCTA 270  
LBC promoter AGTGGTTCATATTTGCTCTGCTATGCTGAGATGTTGGCTTGGCTGTTTCCACTGGACCATTTTCTACCCACATTTGAGAGGAAGCTA 270

ZBC promoter TTAATGATATCCACATGTAATAATCAAGTCTCTTAGACAATATATCTCTATGGTAAACITTCACCTCAATAGTACTTTTTGGC 360  
LBC promoter TTAATGATATCCACATGTAATAATCAAGTCTCTTAGACAATATATCTCTATGGTAAACITTCACCTCAATAGTACTTTTTGGC 360

ZBC promoter TCTCAATTAAGTCTTCACTGATAAAAATAAATCTCTGAGGTGCTTTCTCTCATCAAAAACACTAGACAACCCGAAAAATACCTTAGA 450  
LBC promoter TCTCAATTAAGTCTTCACTGATAAAAATAAATCTCTGAGGTGCTTTCTCTCATCAAAAACACTAGACAACCCGAAAAATACCTTAGA 450

ZBC promoter ACCGACCATACTAACAACCAATTCAGCCACATCTAACGTTGATCTCTAGAAGTCAATGAAGGCAATCTACAACATTCGGTTAGACAAAT 540  
LBC promoter ACCGACCATACTAACAACCAATTCAGCCACATCTAACGTTGATCTCTAGAAGTCAATGAAGGCAATCTACAACATTCGGTTAGACAAAT 540

ZBC promoter CPACAATCTCAATCTTATAGAACCATATACTGAGCCCATATAGCAAAATAAAGAACTTCTCCACTCCG-----TTTATA 614  
LBC promoter CPACAATCTCAATCTTATAGAACCATATACTGAGCCCATATAGCAAAATAAAGAACTTCTCCACTCCGTTAAGCACTTACACTCTTTATA 630

ZBC promoter AANCAACCCGGAACATCGATCAACCACTCACATTGATACCGAANCAACAAATAAGCAAAAGAGAAATTCAGCTCCCTGAT 704  
LBC promoter AANCAACCCGGAACATCGATCAACCACTCAC-----AANCAACAAATAAGCAAAAGAGAAATTCAGCTCCCTGAT 709

ZBC promoter GAAAAATCACTGGAGCTGGTTAAGAAATGAAGGAAGTCCCAATGAAATACGAAAGGCTGAAGAAAGATAGAAAGTACTGTTTTGTGTC 794  
LBC promoter GAAAAATCACTGGAGCTGGTTAAGAAATGAAGGAAGTCCCAATGAAATACGAAAGGCTGAAGAAAGATAGAAAGTACTGTTTTGTGTC 799

ZBC promoter AATGATGATATTTAAAAATAGTTTTTATTAATAAAGATAGCATGTACATTTAAAGAGAAATCACTAGTAAATATCTTGTAGGC 884  
LBC promoter AATGATGATATTTAAAAATAGTTTTTATTAATAAAGATAGCATGTACATTTAAAGAGAAATCACTAGTAAATATCTTGTAGGC 889

ZBC promoter CAAAAAATAAATAAATCAATGTCAAAAGAAATCCCTAATCGCCAAATATATATAATAAATAAATAATTTGAAAACAAATGAAAAGAAAGTA 974  
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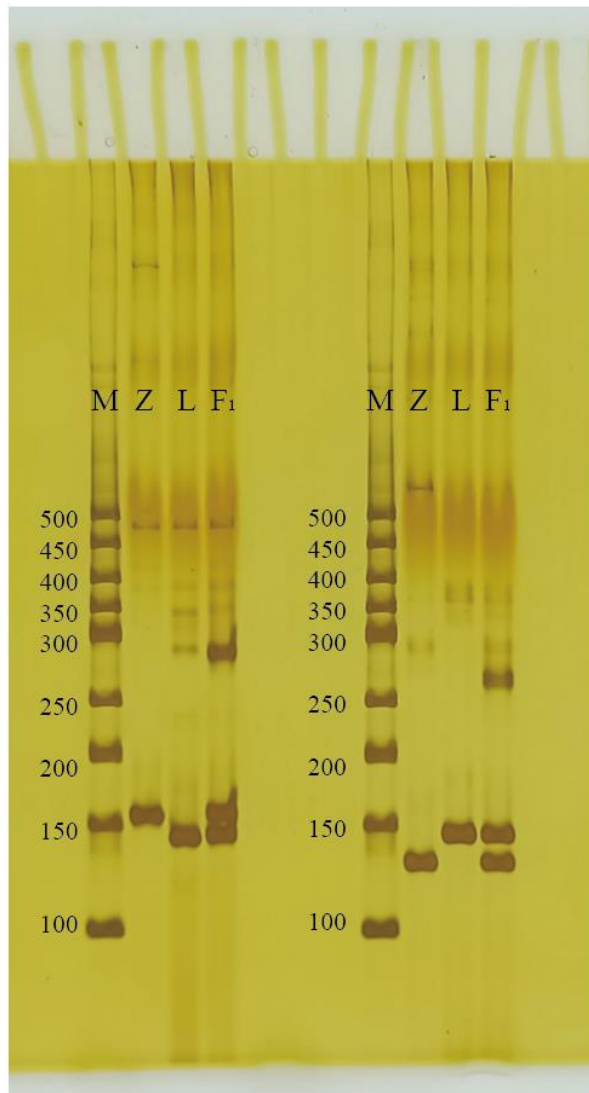
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ZBC promoter TAATAAATCAATCAACTTACCAGTTTCCAAAGTACCAAAACAAATCAAGTCCCTAGCCAACTAACCTTCCACACGTTCTTCCCGGTAG 1154  
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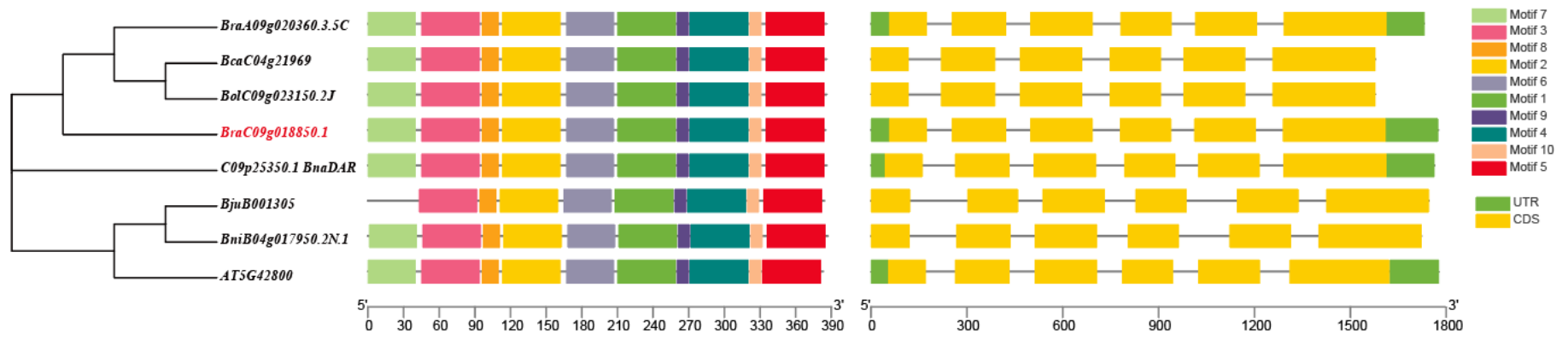
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LBC promoter TACTACAGTACAGGTTGCTTCTTAAATAGCAATGTTGAGGCTGTTGTTGCTTATAAATGTTTTCTTATAGCAGAAAGATTTCCACCGA 1249

ZBC promoter AGCTACATAGTAAACTCTTTCTCAAAGATAAATCCATCTTCCACACAAAG 1296  
LBC promoter AGCTACATAGTAAACTCTTTCTCAAAGATAAATCCATCTTCCACACAAAG 1301

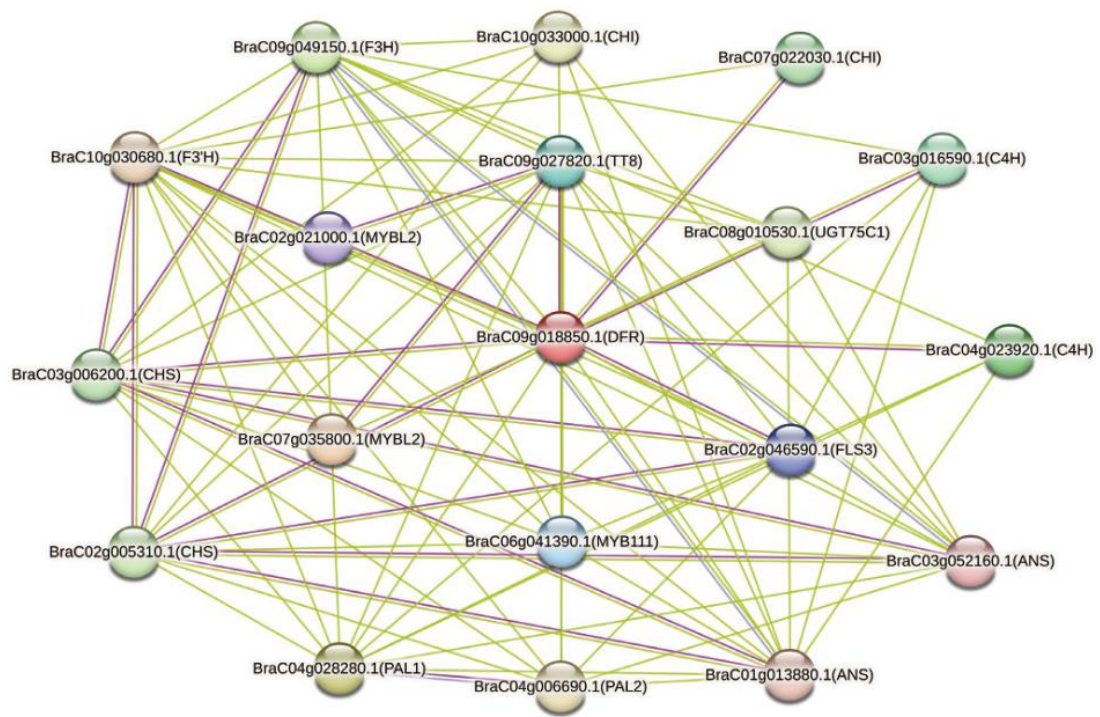
**Fig.S2 Gene and promoter sequence comparison results of *BcDFR* in ZBC, LBC. (a) Results of the 2146 bp full length genome sequence comparison. (b) Results of the 1296 bp promoter sequence comparison.**



**Fig.S3 Full-length polyacrylamide gel electrophoresis of amplification of insertion and deletion markers on ZBC, LBC and F<sub>1</sub>.**

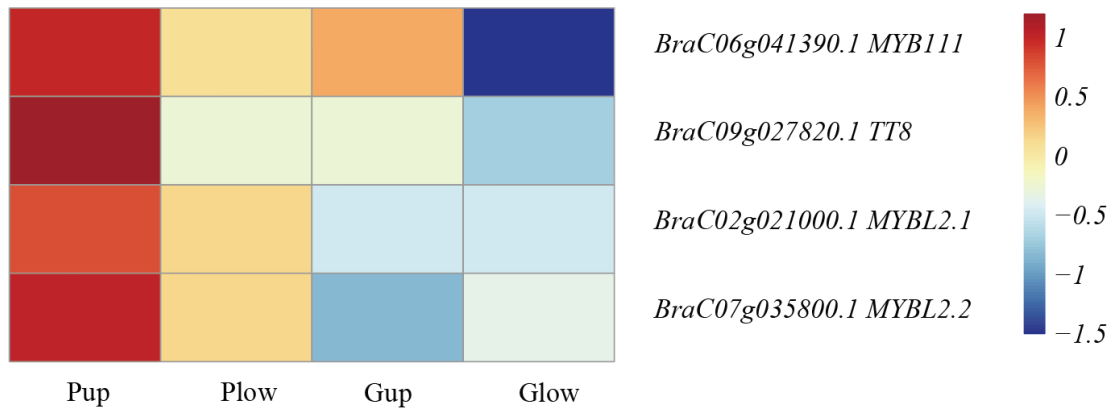


**Fig.S4 Evolution, gene structure and conserved domain analysis of DFR homologs in Arabidopsis and six *Brassica* species.**



**Fig.S5 Protein-protein interaction network between *BcDFR* and anthocyanin-related DEGs.**

## Heatmap



**Fig.S6 Heat map of gene expression patterns of *BcMYB111*, *BcTT8* and *BcMYBL2*.**