

1 **Supplementary information**

2 **Authentication of *Panax ginseng* from different regions**

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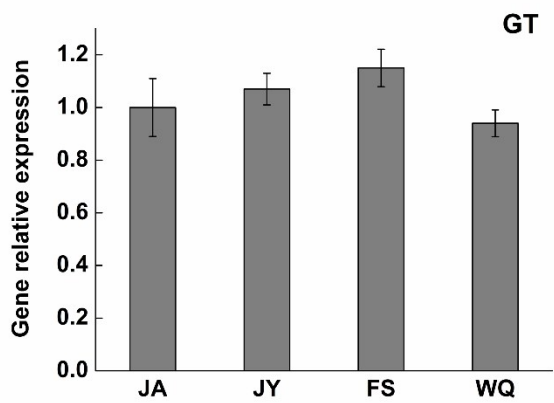
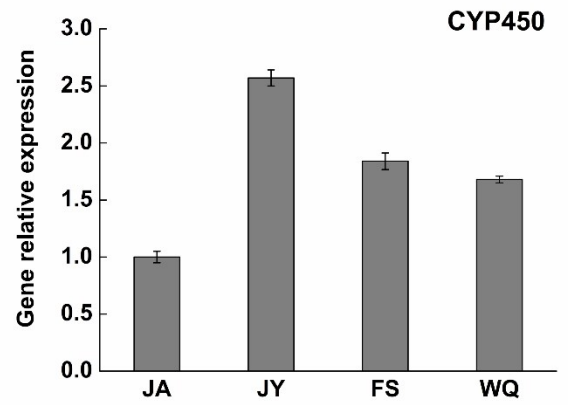
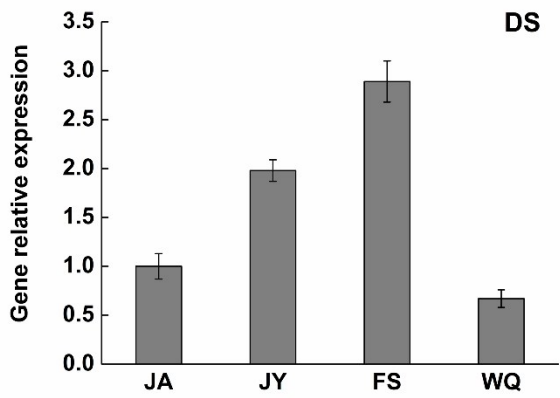
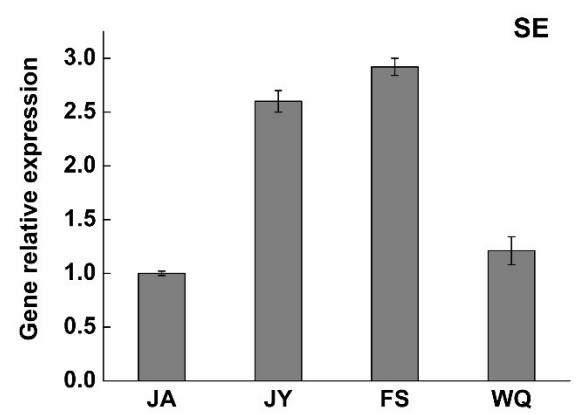
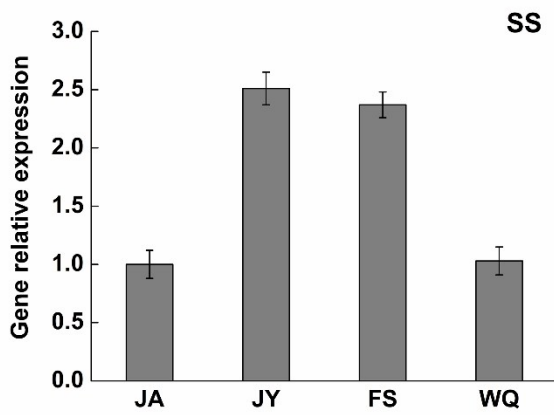
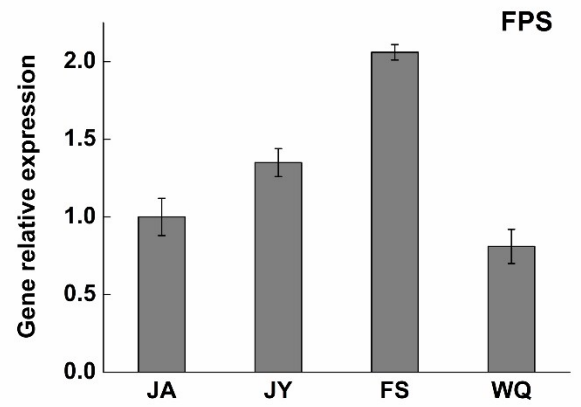
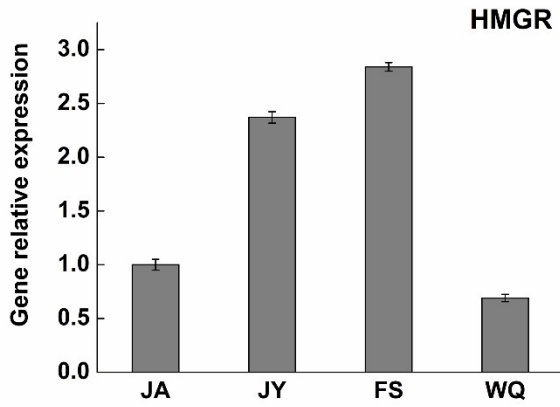
27 **The expression of key enzymes**

28 The primers of key genes were in Table S1. The gene expression of fresh ginseng from different  
 29 regions was treated with the formula  $2^{-\Delta\Delta Ct}$ . The result was displayed in Figure S1.

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**Table S1. The gene primers of the key enzymes**

	Genebank ID	Forward primer	Reverse primer
HMGR	GQ455990	5'-ATGGTGTCCAAGGGTGTTCAG-3'	5'-CTTTCCTCGCCCTTCAATCC-3'
FPS	DQ087959	5'-ACCCTGTTGGTTCAGATTACCTAAG-3'	5'-ATCCAACAGATCCACATAGTAAGGC-3'
SS	AB010148	5'-TTGGAAGCGTTACCAGGAG-3'	5'-GAGGCATGGAAGAGCTTTGAC-3'
SE	AB122078	5'-CATTAGAACCATGCCAAACAGAA-3'	5'-TGGCGCATATTGAAAGCATC-3'
DS	GU183405	5'-CAGCGGAACGATTGACACTATTC-3'	5'-ATCGTGCTGTGCCCTCAAT-3'
GT	KM491309	5'-GGCATCGCTTCTTGTGGTCC-3'	5'-GCCCATCCAATCACTTTTCC-3'
CYP450	AB122079	5'-AGATGCCGTTGTCCGAGTTG-3'	5'-CGCAACAGGGTGTAGCCTTA-3'

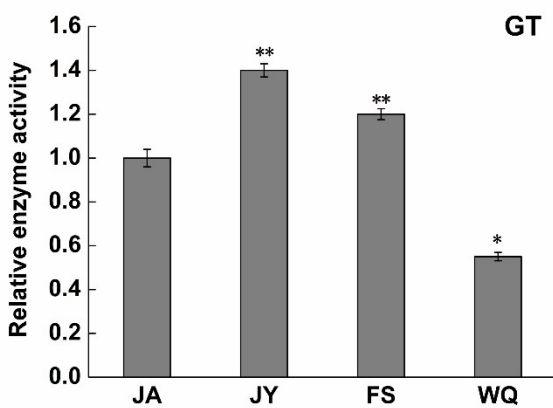
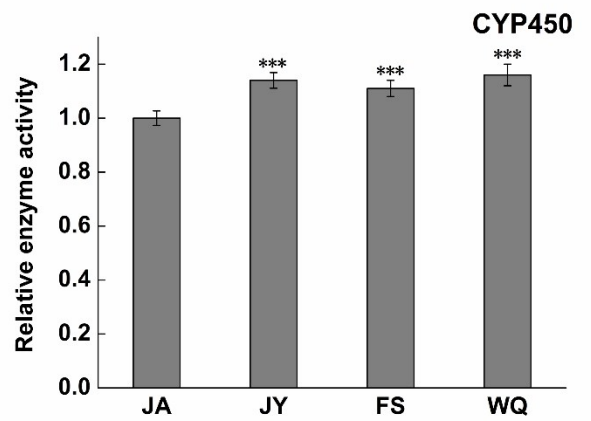
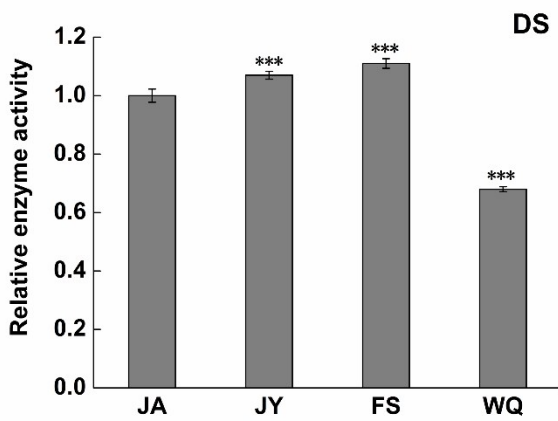
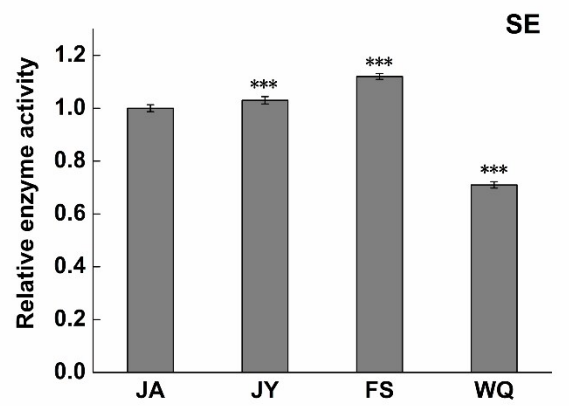
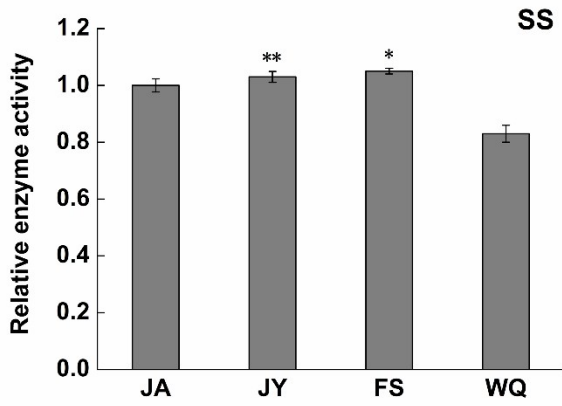
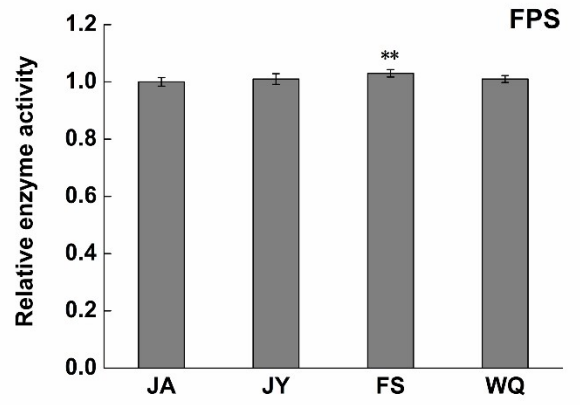
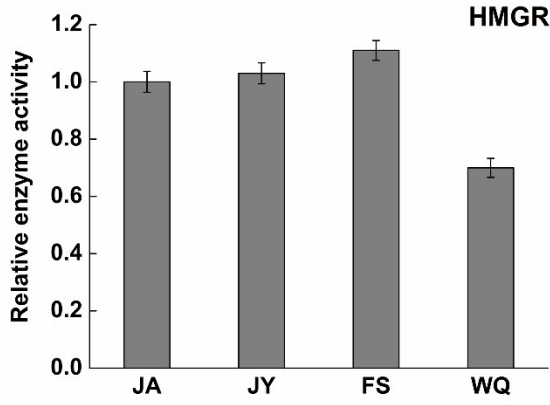


32 **Fig S1** | Gene expression of key enzymes in ginseng from different regions (the JA region was  
33 the control group, n = 8)

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35 **The activity of key enzymes**

36 The activity of key enzyme in fresh ginseng from different regions was measured by different  
37 methods. In order to compare the different regions, we used the JA region as the control and the  
38 data was normalized. The result was displayed in Figure S2.



40 **Fig S2** | Enzyme activity in fresh ginseng from different regions (the JA region was the control  
41 group (Enzyme activity at 2 years of growth was the control group, n=8 ginseng.)