



Fig.1: Traditional processing methods of Huangqin were described in the ancient book of《BU YI LEI GONG BIAN LAN》, which was published in the Ming Dynasty, around 1591 A.D.

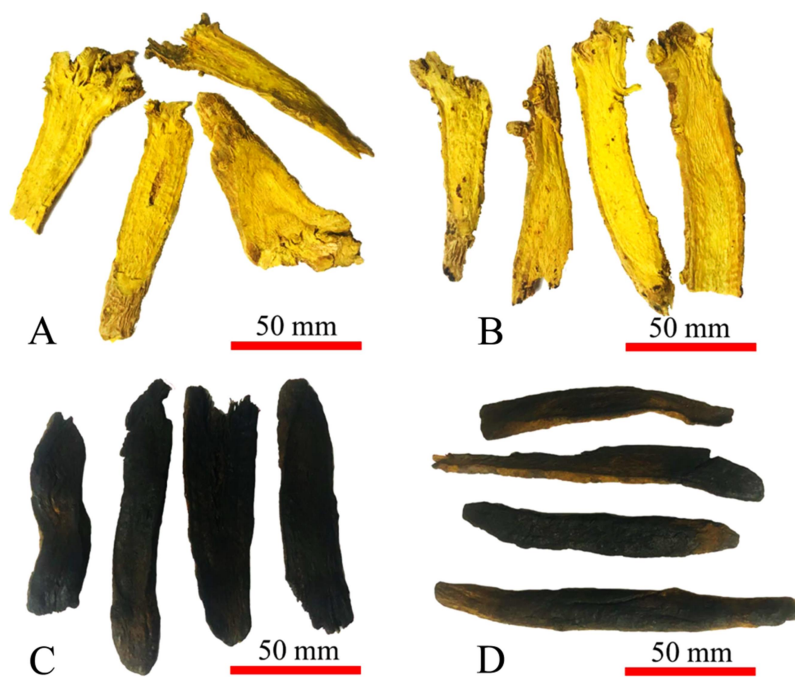


Fig.2: Different types of *Huangqin* products, including the (A) crude *Huangqin*, (B) alcohol *Huangqin*, (C) carbonized *Huangqin*, as well as the (D) incompletely carbonized *Huangqin*.

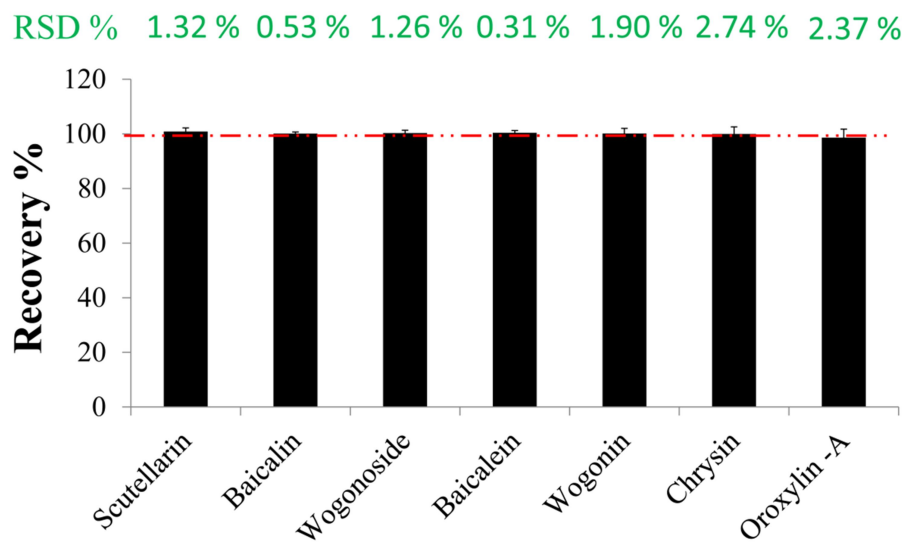


Fig.3: Recovery test of the targeted 7 compounds, which are scutellarin, baicalin, wogonoside, baicalein, wogonin, chrysin, and oroxylin. The results showed that all rates of recovery were in 100 % ± 0.6 %.

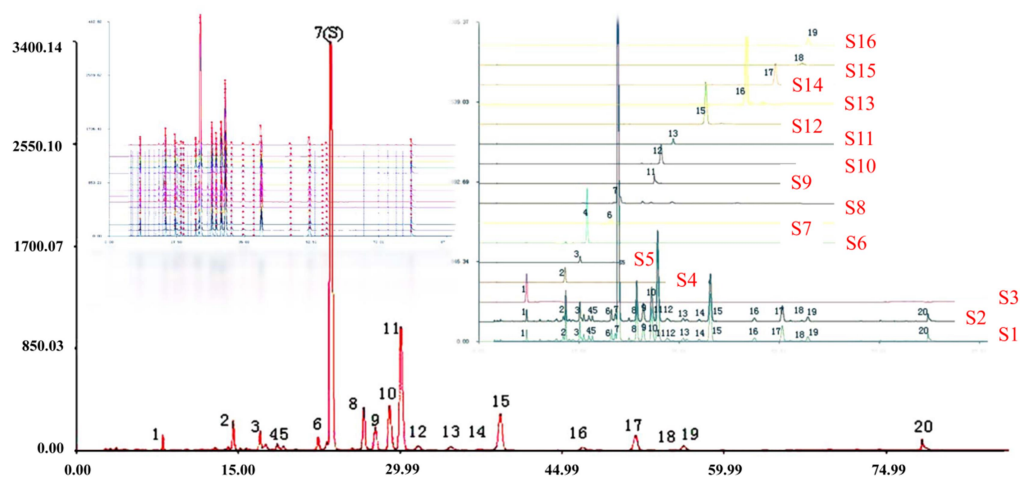


Fig.4: Chemical fingerprints and characteristic peaks. Crude herb of *Huangqin* were used for establishing a chemical fingerprint, and 14 peaks were identified by using the separated compounds and purchased standards. The identified peaks are 3,5,7,2',6' - pentahydroxyflavone (1), 5,7,2',5' - tetrahydroxy - 8,6' - dimethoxyflavone (2), scutellarin (3), 5,7,3',4' - tetrahydroxydihydroflavone (4), baicalin - 7 - O-β-D-glucoside (6), baicalin (7), wogonoside (11), luteolin (12), 5,7,2',3' - tetrahydroxyflavone (13), baicalein (15), 5,6 - dihydroxy - 7,8,2',6' - tetramethoxyflavone (16), wogonin (17), chrysin (18), oroxylin - A (19) respectively.

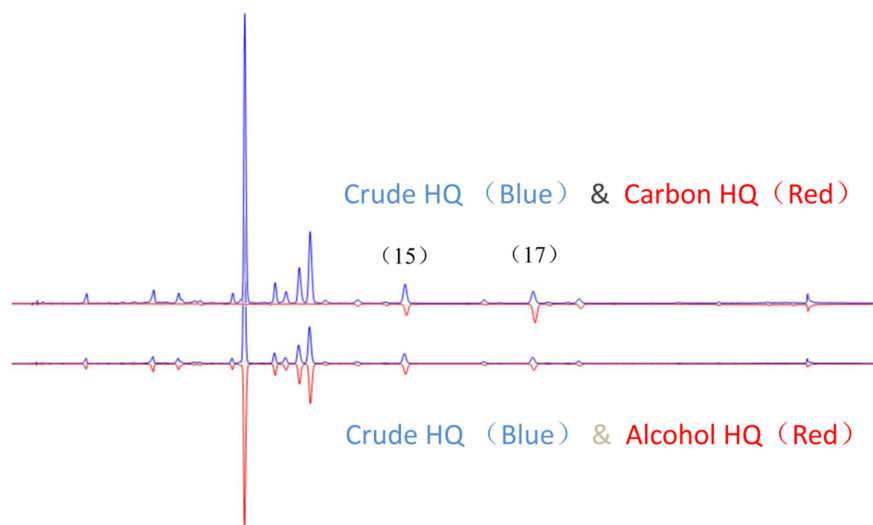


Fig.5: fingerprint characteristics compared with different processed products. (A) carbonization made the chemical composition relatively simple than the crude herb, and a large number of flavonoids within 40 minutes of the reservation have been disappeared; (B) the peak areas of baicalein (Peak 15) and wogonin (Peak 17) had not decreased but a tendency to increase in proportion.

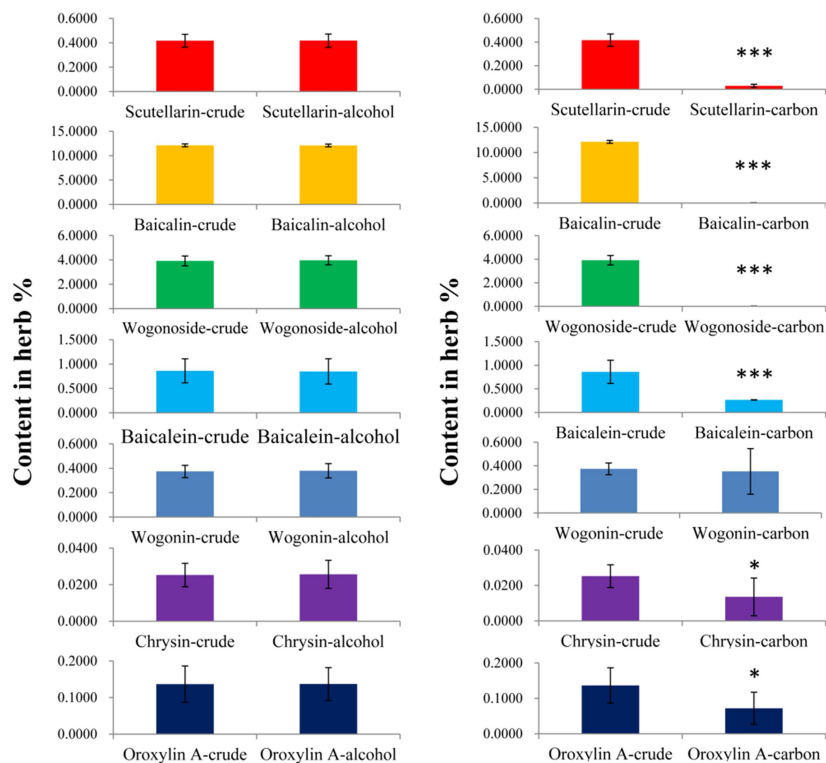


Fig.6: Comparison of different processed products and crude herb in the content of 7 active ingredients. (A): comparison of crude *Huangqin* and the alcohol *Huangqin*; (B): comparison of crude *Huangqin* and the carbonized *Huangqin*. Significant difference: ***: T-test, $P < 0.001$; * $P < 0.05$.

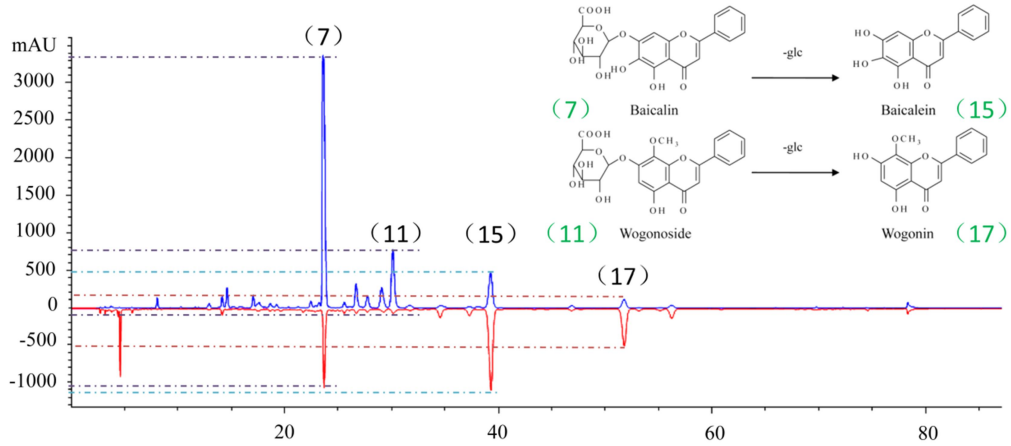


Fig.7: Fingerprint signal recognition on the transformation between glycosides and flavonoid aglycon.

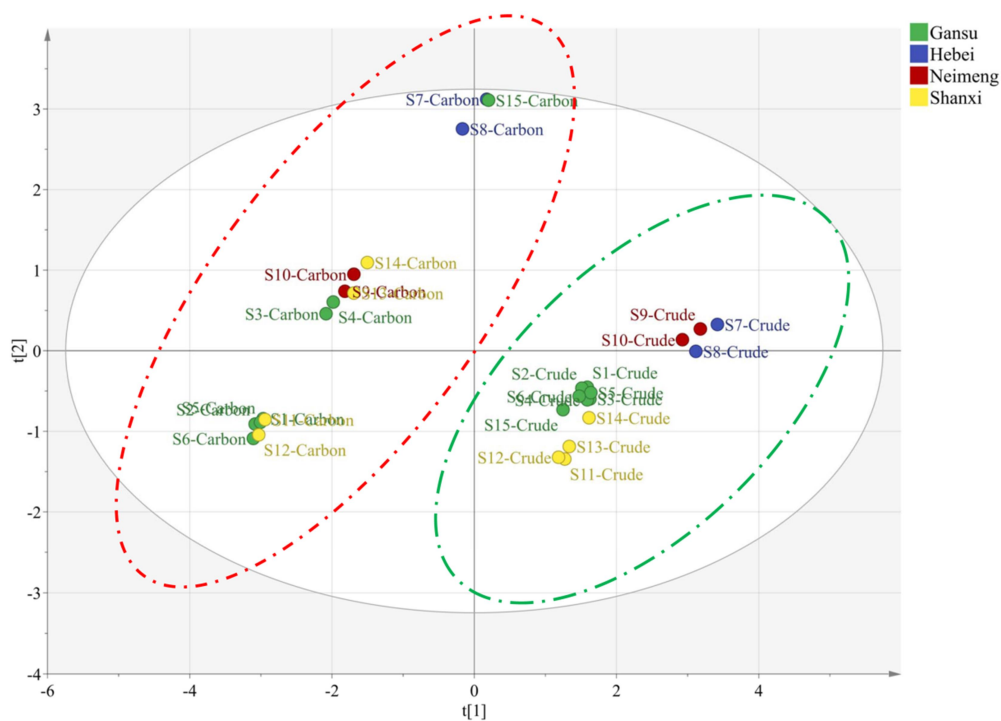


Fig.8: Principal component analysis (PCA) for crude *Huangqin* and carbonized *Huangqin*.

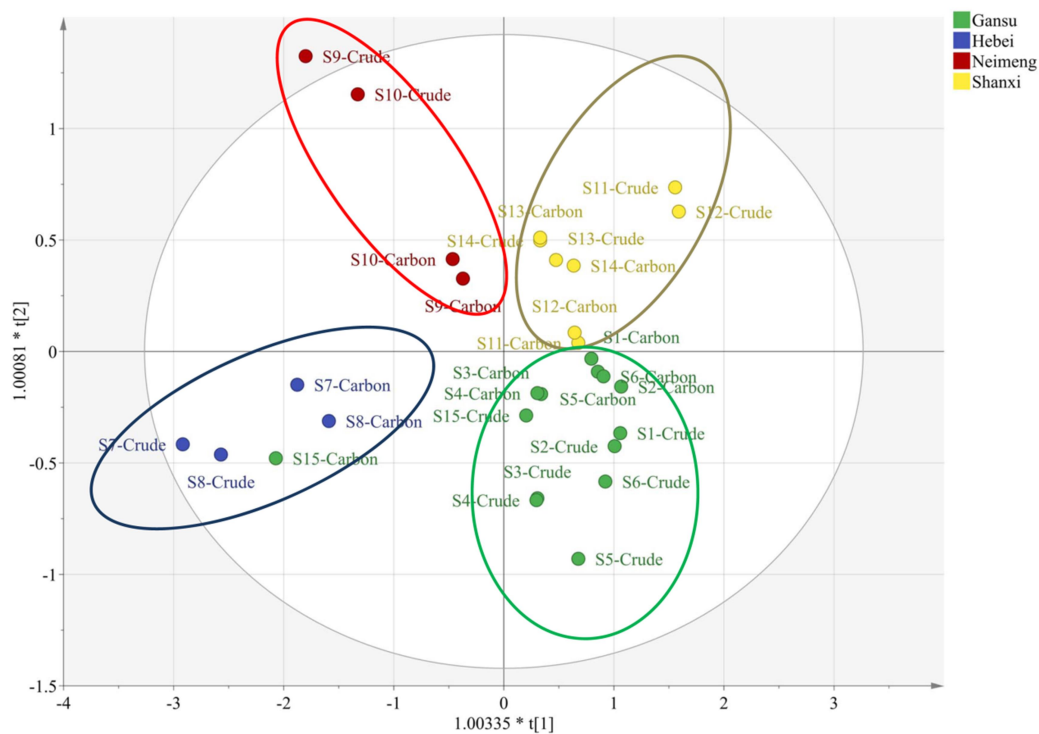


Fig.9: Orthogonal projections to latent structures discriminant analysis (OPLS-DA) for crude

Huangqin and carbonized *Huangqin*.

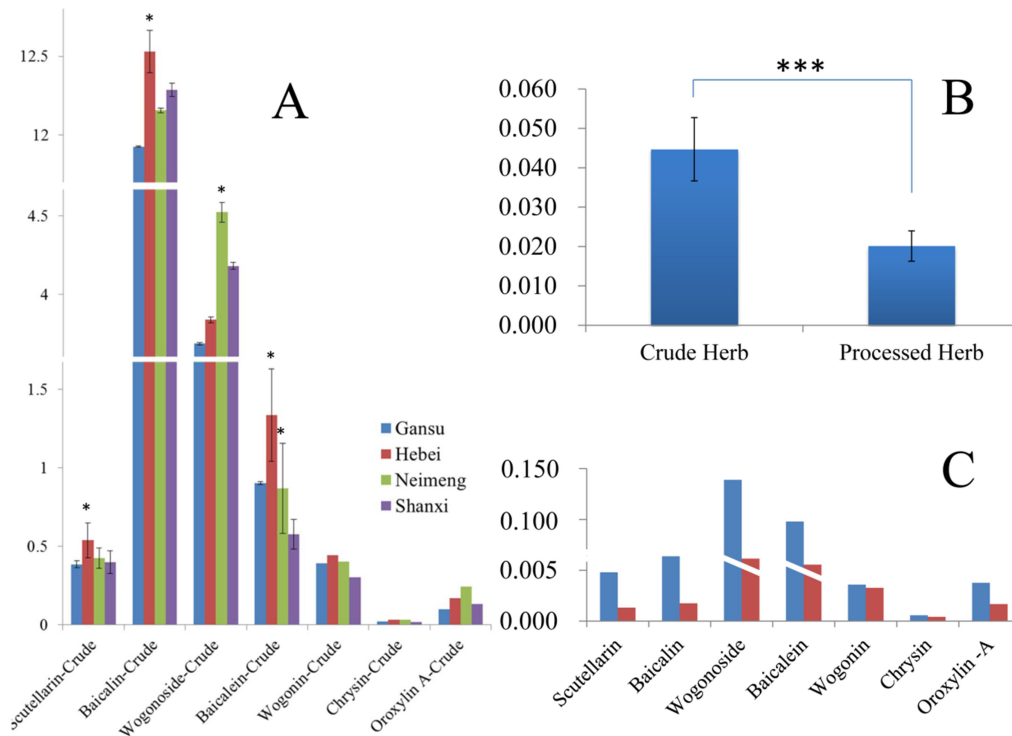


Fig.11: Differences in active ingredient content of *Huangqin* collected from different habitats, and the effect of processing with alcohol on homogeneity of *Huangqin*. (A) The content of effective components of *Huangqin* from different origins is inconsistent; (B&C) Dispersion analysis of the content of active ingredients on the *Huangqin* collected from different origins; Significant difference: ***: T-test, $P < 0.001$; * $P < 0.05$.