

**Supplementary Table S1** The information of fresh root of *Polygala tenuifolia*.

| No.     | Origin   | Geographical Coordinate | Weight (Kg) | Time                  | Purpose  |
|---------|--|-------------------------|-------------|-----------------------|--|
| Spt 1   | Caojia village, Yuyang District, Yulin City, Shaanxi province                | 38°16'25"N,109°97'95"E  | 50          | March, 2023           | Optimize the Production manufacturing process of Fresh Group (F Group) |
| Spt 2   | Panfeng village, Hengshan County, Yulin City, Shaanxi province               | 37°53'33"N,109°15'22"E  | 50          |                       |  |
| Spt 3   | Qinmajian village, Jia County, Yulin City, Shaanxi province                  | 38.00'32"N,110.22'63"E  | 50          |                       |  |
| Spt 4   | Fengjiamao village, Hengshan County, Yulin City, Shaanxi province            | 37°35'45"N,109°30'22"E  | 50          |                       |  |
| Ct 1    | Upstream of clear water village, Zizhou County, Yulin City, Shaanxi province | 37°26'45"N,110°217"E    | 5           | October, 2023         | Contrast Research of Fresh Group (F Group) and Control Group (C Group) |
| Ct 2    | Tuojiawan village, Zizhou County, Yulin City, Shaanxi province               | 37°27'19"N,110°1'2"E    | 5           |                       |  |
| Ct 3    | Liang western hill village, Hengshan County, Yulin City, Shaanxi province    | 37°34'28"N,109°26'41"E  | 5           |                       |  |
| Ct 4    | Peijia village, Hengshan County, Yulin City, Shaanxi province                | 37°23'5"N,110°3'7"E     | 5           |                       |  |
| Ct 5    | Gaoyapan village, Hengshan County, Yulin City, Shaanxi province              | 37°33'42"N,109°33'5"E   | 5           |                       |  |
| Ct 6    | Macha village, Zizhou County, Yulin City, Shaanxi province                   | 37°33'28"N,109°37'34"E  | 5           |                       |  |
| Ct 7    | Heiquangou village, Zizhou County, Yulin City, Shaanxi province              | 37°22'35"N,109°55'18"E  | 5           |                       |  |
| Ct 8    | Dujia village (杜家村), Zizhou County, Yulin City, Shaanxi province             | 37°27'50"N,109°59'42"E  | 5           |                       |  |
| Ct 9    | Wenjia village, Zizhou County, Yulin City, Shaanxi province                  | 37°38'39"N,109°48'44"E  | 5           |                       |  |
| Ct 10   | Lijia village, Zizhou County, Yulin City, Shaanxi province                   | 37°25'58"N,110°0'59"E   | 5           |                       |  |
| Ct 11   | Hujia village, Hengshan County, Yulin City, Shaanxi province                 | 37°35'5"N,109°26'10"E   | 5           |                       |  |
| Ct 12   | Guandao Village, Zizhou County, Yulin City, Shaanxi Province                 | 37°22'19"N,109°59'54"E  | 5           |                       |  |
| Ct 13   | Fengjia village, Zizhou County, Yulin City, Shaanxi province                 | 37°22'14"N,109°54'60"E  | 5           |                       |  |
| Ct 14   | Wangjia village, Hengshan County, Yulin City, Shaanxi province               | 37°33'60"N,109°26'33"E  | 5           |                       |  |
| Ct 15   | Weijia village, Hengshan County, Yulin City, Shaanxi province                | 37°32'56"N,109°31'22"E  | 5           |                       |  |
| Ct 16   | Huaining Bay village, Zizhou County, Yulin City, Shaanxi province            | 37°23'48"N,110°6'16"E   | 5           |                       |  |
| Ct 17   | Dujia village (杜家圪台村), Suide County, Yulin City, Shaanxi province            | 37°279"N,110°6'48"E     | 5           |                       |  |
| Ct 18   | 圪圖 village Zizhou County of Yulin City, Shaanxi Province                     | 37°21'37"N,109°54'53"E  | 5           |                       |  |
| Qta 1-3 | Peijia village, Hengshan County, Yulin City, Shaanxi province                | 37°23'5"N,110°3'7"E     | 10          | March to August, 2023 | Quasi-Targeted Metabolomics Analysis                                   |

Spt: Small pilot test      Ct: Contrast test      Qta: Quasi-Targeted Metabolomics Analysis