

## Electronic supplementary information

### Shengxian Decoction in chronic heart failure treatment and synergistic property of Platycodonis Radix: a metabolomic approach and its application<sup>†</sup>

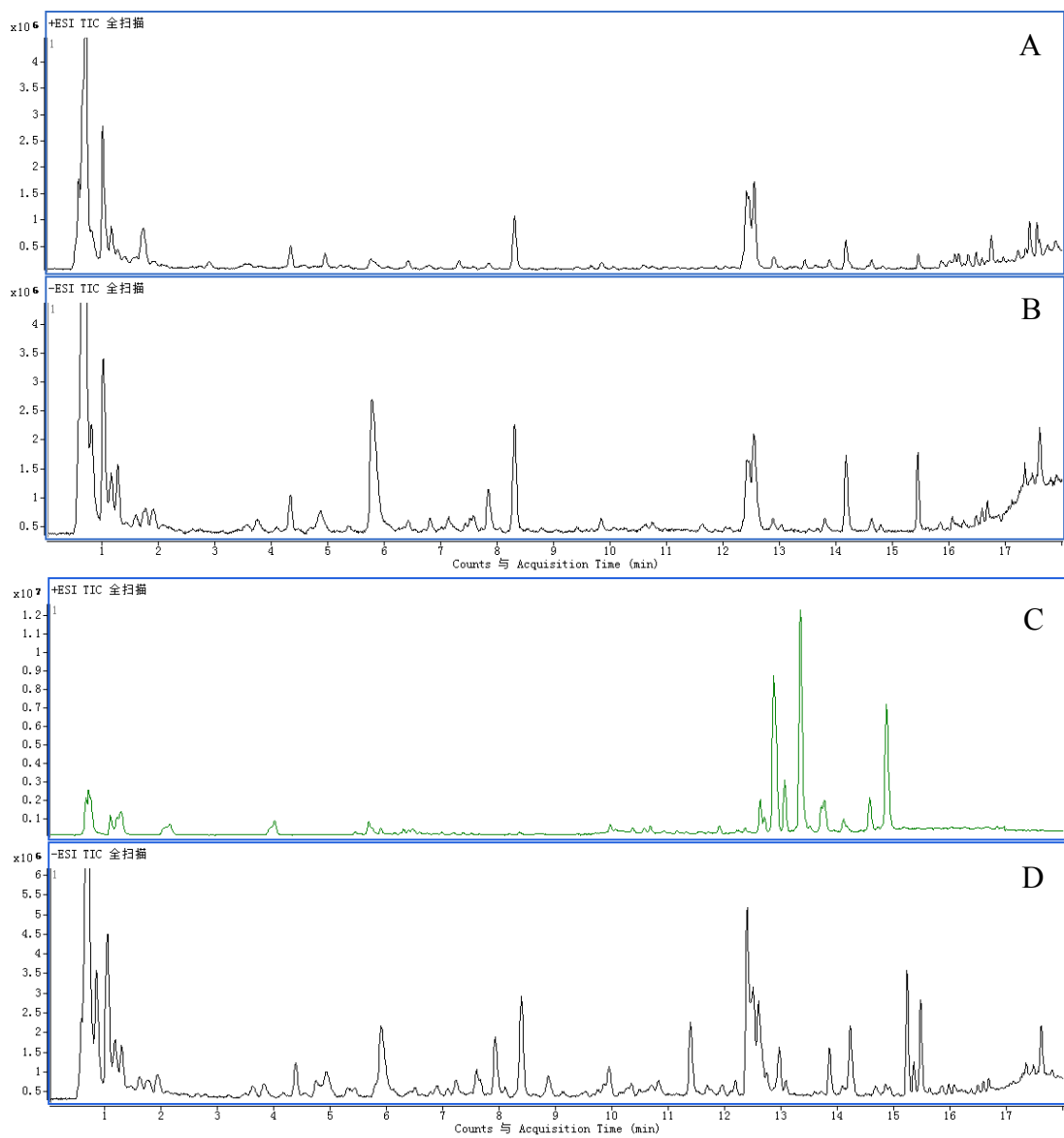
Feng Zhang,<sup>‡a</sup> Qin Zhan,<sup>‡a</sup> Xin Dong,<sup>b</sup> Bo Jiang,<sup>a</sup> Lianna Sun,<sup>b</sup> Shouhong Gao,<sup>a</sup> Zhiqing He,<sup>c</sup> Xia Tao,<sup>a</sup> WanSheng Chen<sup>\*a</sup>

#### Preparation of SXT, SXT-PG and PG

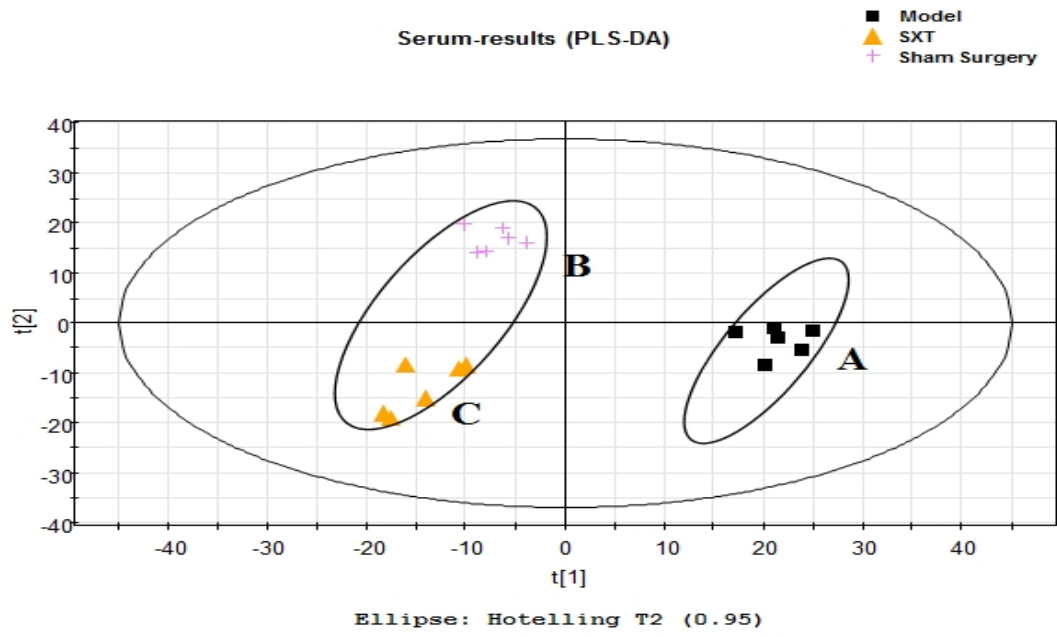
SXT: Powders of Astragali Radix (600 g), Anemarrhenae Rhizoma (300 g), Bupleuri Radix (150 g), Platycodonis Radix (150 g), and Cimicifuge Rhizoma (100 g) were suspended in water in a beaker flask (5 L) for 24 h, and then were boiled with water (5 L × 3). The combined water decoction (approximately 15 L) was concentrated (650 mL) by a rotary evaporator under vacuum, and the concentrated decoction (SXT, 2.0 mg/mL) was stored in the refrigerator at 4 °C before analysis. The concentrations of main bioactive compounds of SXT, including astragaloside IV, calycosin-7-O-β-D-glucoside, timosaponin B-II, mangiferin, saikosaponin A, saikosaponin D, platycodin D and prim-O-glucosylcimifugin, were 0.28, 0.41, 55.56, 3.34, 2.23, 0.41, 6.12, 0.95 μg/mg (mg referred SXT dry extract) respectively.

Preparation of SXT-PG (650 mL, 1.77 mg mL<sup>-1</sup>) was the same as that of SXT, except that Platycodonis Radix was removed.

Preparation of PG (650 mL, 0.23 mg mL<sup>-1</sup>) was the same as that of SXT, and only Platycodonis Radix was extracted.



**Fig. S1** TICs of urine samples in positive (A) and negative modes (B); TICs of serum samples in positive (C) and negative (D) modes.



**Fig. S2** PLS-DA score plots of serum metabolic profiling of model, sham surgery and SXT groups in day 37.

**Table S1** RSDs for each peak in urine QC samples (n=6).

| No             | <i>t<sub>R</sub></i> (min) |        |        |        |        |        |        |        |        |         |
|----------------|----------------------------|--------|--------|--------|--------|--------|--------|--------|--------|---------|
|                | peak 1                     | peak 2 | peak 3 | peak 4 | peak 5 | peak 6 | peak 7 | peak 8 | peak 9 | peak 10 |
| 1              | 4.39                       | 5.86   | 7.89   | 8.38   | 11.39  | 12.40  | 13.87  | 14.21  | 15.24  | 15.48   |
| 2              | 4.39                       | 5.88   | 7.91   | 8.41   | 11.39  | 12.41  | 13.88  | 14.24  | 15.25  | 15.48   |
| 3              | 4.40                       | 5.91   | 7.93   | 8.40   | 11.40  | 12.40  | 13.86  | 14.24  | 15.24  | 15.48   |
| 4              | 4.40                       | 5.92   | 7.94   | 8.41   | 11.41  | 12.41  | 13.88  | 14.25  | 15.25  | 15.50   |
| 5              | 4.39                       | 5.91   | 7.92   | 8.39   | 11.39  | 12.39  | 13.87  | 14.23  | 15.24  | 15.48   |
| 6              | 4.43                       | 5.91   | 7.92   | 8.43   | 11.42  | 12.42  | 13.89  | 14.24  | 15.25  | 15.49   |
| <b>RSD (%)</b> | 0.39                       | 0.37   | 0.22   | 0.19   | 0.13   | 0.08   | 0.05   | 0.09   | 0.05   | 0.05    |

**Table S2** RSDs for each peak in plasmatic QC samples (n=6).

| No             | <i>t<sub>R</sub></i> (min) |        |        |        |        |        |        |        |        |         |
|----------------|----------------------------|--------|--------|--------|--------|--------|--------|--------|--------|---------|
|                | peak 1                     | peak 2 | peak 3 | peak 4 | peak 5 | peak 6 | peak 7 | peak 8 | peak 9 | peak 10 |
| 1              | 4.02                       | 9.98   | 11.15  | 11.90  | 12.64  | 12.88  | 13.08  | 13.35  | 14.59  | 14.88   |
| 2              | 4.02                       | 9.98   | 11.15  | 11.91  | 12.64  | 12.87  | 13.08  | 13.35  | 14.59  | 14.88   |
| 3              | 4.01                       | 9.98   | 11.16  | 11.91  | 12.63  | 12.87  | 13.07  | 13.36  | 14.58  | 14.89   |
| 4              | 4.02                       | 9.97   | 11.16  | 11.91  | 12.64  | 12.87  | 13.07  | 13.35  | 14.58  | 14.89   |
| 5              | 4.02                       | 9.98   | 11.15  | 11.91  | 12.64  | 12.87  | 13.08  | 13.35  | 14.59  | 14.88   |
| 6              | 4.02                       | 9.98   | 11.15  | 11.91  | 12.64  | 12.87  | 13.08  | 13.35  | 14.59  | 14.88   |
| <b>RSD (%)</b> | 0.10                       | 0.04   | 0.02   | 0.02   | 0.03   | 0.03   | 0.03   | 0.02   | 0.03   | 0.02    |