

**TABLE S1.** MLR analysis of the BIS values and the parameters of the IMFs in VMD, the EWT, or WMD.

|                                                                 |       | A. VMD                             | B. EWT           | C. WMD           |
|-----------------------------------------------------------------|-------|------------------------------------|------------------|------------------|
| explanatory variables: 6 central frequencies and 6 total powers |       |                                    |                  |                  |
| determination factor                                            |       | 0.819                              | 0.608            | 0.897            |
| MAE                                                             |       | 0.331                              | 0.473            | 0.244            |
| RMSE                                                            |       | 0.426                              | 0.626            | 0.321            |
| y-intercept                                                     |       | 9.707e-17                          | -6.513e-16       | 3.867e-16        |
| explanatory variables                                           |       | regression coefficient ( $P> t $ ) |                  |                  |
| central frequency                                               | IMF-1 | -                                  | 0.2458 (0.000*)  | 0.0803 (0.034*)  |
|                                                                 | IMF-2 | -                                  | -                | -                |
|                                                                 | IMF-3 | -                                  | 0.3469 (0.000*)  | -0.0714 (0.014*) |
|                                                                 | IMF-4 | -                                  | 0.2336 (0.004*)  | -                |
|                                                                 | IMF-5 | -                                  | -                | 0.1926 (0.000*)  |
|                                                                 | IMF-6 | 0.4614 (0.000*)                    | -                | 0.1535 (0.006*)  |
| total power                                                     | IMF-1 | 0.1147 (0.005*)                    | -                | -                |
|                                                                 | IMF-2 | -                                  | -0.2325 (0.000*) | -0.2519 (0.000*) |
|                                                                 | IMF-3 | -                                  | --               | -                |
|                                                                 | IMF-4 | -0.4115 (0.000*)                   | 0.1493 (0.009*)  | -0.2260 (0.000*) |
|                                                                 | IMF-5 | -                                  | 0.2447 (0.000*)  | -                |
|                                                                 | IMF-6 | -                                  | -                | 0.3144 (0.000*)  |
| <b>D. VMD+EWT+ WMD</b>                                          |       |                                    |                  |                  |
| determination factor                                            |       | 0.879                              |                  |                  |
| MAE                                                             |       | 0.260                              |                  |                  |
| RMSE                                                            |       | 0.348                              |                  |                  |
| y-intercept                                                     |       | -2.44e-16                          |                  |                  |
| explanatory variables                                           |       | regression coefficient ( $P> t $ ) |                  |                  |
| central frequency                                               | IMF-1 | -                                  | 0.1021(0.011*)   | -                |
|                                                                 | IMF-2 | 0.0897 (0.004*)                    | -                | -                |
|                                                                 | IMF-3 | -                                  | -                | -0.0838 (0.010*) |
|                                                                 | IMF-4 | -                                  | 0.1642(0.000*)   | -                |
|                                                                 | IMF-5 | -                                  | -                | -                |
|                                                                 | IMF-6 | -                                  | -                | 0.1958 (0.000*)  |
| total power                                                     | IMF-1 | -                                  | -                | -                |
|                                                                 | IMF-2 | -                                  | -                | -0.2762 (0.000*) |
|                                                                 | IMF-3 | -                                  | -                | -                |
|                                                                 | IMF-4 | -                                  | 0.1197 (0.001*)  | -0.3080(0.000*)  |
|                                                                 | IMF-5 | -                                  | 0.1000 (0.001*)  | -                |
|                                                                 | IMF-6 | -                                  | -                | -                |

The objective variable was the median value of the BIS from 10 patients and the explanatory variables were the statistically significant median values of the central frequencies and the TPs of the IMFs in **A)** VMD, **B)** the EWT, **C)** WMD, or **D)** VMD+EWT+WMD. The EEG data were obtained from the last 30 mins before emergence in 10 patients who received sevoflurane GA. MAE: mean absolute error; RMSE: root mean squared error; \* $p<0.05$ .