Table S1: clustering coefficient analysis results

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Cluster** | **A** | **B** | **C** | **D** | **E** |
| **Whole** | 0.4227±0.0816 | 0.4295±0.0693 | 0.3813±0.0775 | 0.3610±0.0886 | 0.3367±0.0949 |
| **Cortical** | 0.3368±0.1752 | 0.3558±0.1564 | 0.3261±0.1661 | 0.2936±0.1497 | 0.2475±0.1491 |
| **Deep area** | 0.3637±0.1064 | 0.3868±0.1036 | 0.3999±0.1016 | 0.4248±0.1099 | 0.4409±0.0949 |

Table S2: Characteristic path length analysis results

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Path length** | **A** | **B** | **C** | **D** | **E** |
| **Whole** | 1.8842±0.4194 | 1.9086±0.4714 | 1.9053±0.4670 | 1.8662±0.4161 | 1.8601±0.3919 |
| **Cortical** | 1.5802±0.2881 | 1.6195±0.3005 | 1.6329±0.2973 | 1.6608±0.2761 | 1.6185±0.2465 |
| **Deep area** | 1.9228±0.4662 | 1.9299±0.4829 | 1.9159±0.4540 | 1.8907±0.4297 | 1.8852±0.4251 |

Table S3: Efficiency analysis results

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **efficiency** | **A** | **B** | **C** | **D** | **E** |
| **Whole** | 0.6087±0.1112 | 0.6043±0.1181 | 0.6077±0.1140 | 0.6140±0.1064 | 0.6128±0.1072 |
| **Cortical** | 0.5066±0.1865 | 0.5007±0.1890 | 0.5079±0.1915 | 0.5140±0.1920 | 0.5152±0.1850 |
| **Deep area** | 0.5947±0.1264 | 0.5882±0.1357 | 0.5873±0.1309 | 0.5968±0.1268 | 0.5953±0.1282 |

Table S4: Modularity analysis results

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Modularity** | **A** | **B** | **C** | **D** | **E** |
| **Whole** | 0.2658±0.1019 | 0.2818±0.1156 | 0.2556±0.1056 | 0.2323±0.0969 | 0.2201±0.0919 |
| **Cortical** | 0.2610±0.0712 | 0.2915±0.0716 | 0.2400±0.0905 | 0.2019±0.0709 | 0.1945±0.0698 |
| **Deep area** | 0.2615±0.0903 | 0.2705±0.0987 | 0.2550±0.0958 | 0.2954±0.0863 | 0.3295±0.0910 |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Frontal****(L)** | **Frontal****(R)** | **Temporal****(L)** | **Temporal****(R)** | **Parietal****(L)** | **Parietal****(R)** | **Occipital****(L)** | **Occipital****(R)** | **Angular****(L)** | **Angular****(R)** |
| **A** | 7.67 | 6.29 | 10.81 | 9.62 | 9.80 | 8.22 | 10.82 | 9.72 | 10.28 | 9.51 |
| **B** | 8.11 | 8.43 | 10.57 | 9.87 | 9.15 | 7.67 | 10.97 | 10.41 | 9.53 | 8.61 |
| **C** | 8.50 | 8.65 | 10.31 | 10.50 | 7.75 | 8.62 | 10.70 | 9.91 | 8.73 | 9.79 |
| **D** | 8.99 | 8.66 | 11.38 | 9.69 | 9.92 | 8.77 | 11.12 | 9.71 | 8.84 | 10.51 |
| **E** | 8.42 | 8.17 | 11.89 | 9.20 | 10.07 | 7.94 | 11.00 | 9.21 | 7.10 | 11.32 |

Table S5(a): The change in degree of cortical area during anesthesia recovery

**Table S5(b):The change in degree of deep areas during anesthesia recovery**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **L** | **Hippocampus** | **Cingulum** | **amygdala** | **Entorhinal** | **fusiform** | **SMP** | **lingual** | **cuneus** | **calcarine** | **Interior frontal** | **insular** |
| **A** | 7.97 | 9.12 | 10.99 | 7.40 | 10.54 | 9.12 | 7.86 | 10.03 | 8.79 | 9.90 | 8.14 |
| **B** | 7.80 | 10.13 | 11.13 | 7.64 | 10.83 | 8.30 | 8.12 | 9.53 | 10.06 | 8.41 | 7.84 |
| **C** | 10.21 | 9.50 | 11.16 | 9.00 | 10.81 | 8.44 | 8.45 | 9.28 | 10.41 | 8.25 | 8.15 |
| **D** | 8.95 | 9.85 | 10.69 | 8.72 | 10.80 | 7.08 | 8.96 | 10.27 | 9.54 | 8.41 | 9.10 |
| **E** | 8.30 | 10.10 | 11.15 | 10.67 | 10.47 | 8.01 | 8.05 | 9.59 | 9.61 | 7.08 | 9.43 |
| **R** | **Hippocampus** | **Cingulum** | **amygdala** | **Entorhinal** | **fusiform** | **SMP** | **lingual** | **cuneus** | **calcarine** | **Interior frontal** | **insular** |
| **A** | 9.16 | 9.85 | 11.84 | 7.97 | 7.47 | 9.10 | 10.46 | 9.86 | 10.33 | 9.35 | 9.52 |
| **B** | 9.42 | 9.00 | 11.15 | 7.39 | 9.20 | 9.07 | 10.07 | 10.48 | 9.56 | 8.17 | 10.88 |
| **C** | 9.52 | 8.20 | 11.32 | 8.49 | 9.36 | 7.56 | 8.90 | 8.50 | 9.08 | 8.55 | 10.90 |
| **D** | 7.27 | 9.16 | 10.18 | 7.57 | 9.19 | 8.39 | 9.83 | 8.69 | 9.40 | 9.40 | 8.48 |
| **E** | 9.74 | 8.18 | 11.68 | 8.31 | 8.55 | 9.34 | 9.66 | 7.88 | 11.12 | 6.86 | 9.40 |

Table S6(a): Change in Betweenness centrality of cortical area:

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Frontal****(L)** | **Frontal****(R)** | **Temporal****(L)** | **Temporal****(R)** | **Parietal****(L)** | **Parietal****(R)** | **Occipital****(L)** | **Occipital****(R)** | **Angular****(L)** | **Angular****(R)** |
| **A** | 20.15 | 14.37 | 33.56 | 24.12 | 35.57 | 25.86 | 21.34 | 23.12 | 36.16 | 29.23 |
| **B** | 25.03 | 23.15 | 25.62 | 22.51 | 32.71 | 29.66 | 25.87 | 24.28 | 32.03 | 32.76 |
| **C** | 26.67 | 29.51 | 24.37 | 37.73 | 22.12 | 29.14 | 21.67 | 26.41 | 28.62 | 31.73 |
| **D** | 25.82 | 21.06 | 38.31 | 32.86 | 29.79 | 22.42 | 30.68 | 33.20 | 24.49 | 36.41 |
| **E** | 26.18 | 20.22 | 41.08 | 26.09 | 34.25 | 21.44 | 31.04 | 30.87 | 12.71 | 43.60 |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **L** | **Hippocampus** | **Cingulum** | **amygdala** | **Entorhinal** | **fusiform** | **SMP** | **lingual** | **cuneus** | **calcarine** | **Interior frontal** | **insular** |
| **A** | 23.45  | 26.38  | 34.09  | 18.88  | 24.94  | 28.91  | 15.56  | 40.54  | 27.09  | 33.55  | 23.52  |
| **B** | 20.53  | 41.70  | 29.96  | 16.49  | 30.31  | 26.45  | 27.43  | 38.35  | 38.99  | 31.77  | 17.75  |
| **C** | 39.12  | 35.24  | 34.76  | 31.95  | 27.94  | 21.29  | 21.35  | 29.51  | 37.00  | 23.28  | 28.67  |
| **D** | 23.34  | 34.52  | 35.15  | 24.89  | 33.23  | 15.16  | 25.39  | 33.23  | 31.43  | 25.12  | 30.57  |
| **E** | 25.07  | 35.75  | 39.58  | 38.55  | 28.85  | 17.91  | 20.57  | 29.70  | 34.31  | 16.97  | 28.53  |
| **R** | **Hippocampus** | **Cingulum** | **amygdala** | **Entorhinal** | **fusiform** | **SMP** | **lingual** | **cuneus** | **calcarine** | **Interior frontal** | **insular** |
| **A** | 36.07  | 33.49  | 48.76  | 21.39  | 17.80  | 27.34  | 40.97  | 28.64  | 39.37  | 32.53  | 27.67  |
| **B** | 36.74  | 22.46  | 38.31  | 19.36  | 32.20  | 28.68  | 30.19  | 39.79  | 31.14  | 26.21  | 29.54  |
| **C** | 30.42  | 22.47  | 31.25  | 26.26  | 41.11  | 17.30  | 26.54  | 28.67  | 26.72  | 31.51  | 43.61  |
| **D** | 22.56  | 25.13  | 37.32  | 20.40  | 29.35  | 24.66  | 29.70  | 25.48  | 28.32  | 32.06  | 23.19  |
| **E** | 26.71  | 17.18  | 39.66  | 26.36  | 21.53  | 25.33  | 28.23  | 18.60  | 36.65  | 11.67  | 37.14  |

Table S6(b): Change in Betweenness centrality of deep areas



Figure S1. Different position of cortical and deep areas observed