***Supplementary Materials***

**Abnormal dynamic functional connectivity of hippocampal subregions associated with working memory impairment in melancholic depression**

## Vcalidation results

The validation results in 30 TRs sliding window length between the two groups also showed melancholic MDD patients exhibited decreased dFC variability values between the left rostral hippocampus and left anterior lobe of cerebellum (Table S1; Fig S1). However, there were no significant differences in 70 TRs sliding window length between the two groups using the hippocampus as the ROIs.

**Table S1. The areas of significantly different dFC between the melancholic MDD patients and the HCs (voxel *p* < 0.005, cluster *p* < 0.0125, GRF corrected)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Subregions | location in the cerebrum | Montreal Neurological  Institute Coordinates | | | Peak *t* Value | | Cluster Size  (voxel numbers) | |
| X | Y | Z | |  | |  | |
| L rostral hippocampus | L\_cerebellum anterior lobe | 0 | -57 | -6 | | -4.05 | | 49 | |

dFC, dynamic functional connectivity; MDD, Major depressive disorder; HCs, healthy controls; GRF, Gaussian random field; L, left hemisphere

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**Fig. S1** The significant dFC differences between the two groups for the hippocampus subregion (voxel *p* < 0.005, cluster *p* < 0.0125, GRF corrected). The color bar indicates the *t* values from two-sample *t*-test analysis. dFC, dynamic functional connectivity; GRF, Gaussian random field; L (R), left (right) hemisphere.