Brain response of placebo response in introvert subjects (ROI-voxel)

In the FC network of the ACC, the findings indicated that compared with pain status, placebo status exhibited increased FC in the posterior cingulate cortex (PCC), brainstem (BRS), right orbitofrontal cortex (OFC), right dorsolateral prefrontal cortex (DLPFC), and the secondary somatosensory area (S2). Besides, the ACC exhibited significantly decreased FC in the cerebellum posterior lobe (CPL), supplementary motor area (SMA), temporal pole (TP), left OFC, thalamus (THS), parahippocampal gyrus (PHP), left DLPFC (*Table S1* & *Figure S1*).

Table S1 The locations of the brain areas showing significantly FC with the ACC in placebo response in introvert subjects. (P<0.05, FDR<0.05)

Brain region	R/L	MNI			Voxel	Z-score
		X	Y	Z		
CPL	L	-12	-36	-51	76	-5.4085
BRS	R	18	-39	-33	200	6.6478
DLPFC	L	-33	36	6	129	-6.0736
DLPFC	R	21	66	6	60	6.08
OFC	R	45	45	-15	114	7.0473
OFC	L	-21	15	-9	88	-4.6067
PCC	R	24	-45	27	3467	12.6427
TP	L	-45	21	-15	129	-7.2788
THS	L	-15	-24	-3	64	-6.5076
PHP	L	-27	-33	3	51	-6.099
S2	R	21	-51	51	200	10.0914
SMA	L	-27	-9	57	3287	-11.1188
SMA	R	9	-12	60	59	-5.3913

FDR, false discovery rate; MNI, Montreal Neurological Institute. ACC, anterior cingulate cortex; BRS, brainstem; CPL, cerebellum posterior lobe; DLPFC, dorsolateral prefrontal cortex; OFC, orbitofrontal cortex; PCC, posterior cingulate cortex; PHP, parahippocampal gyrus; SMA, supplementary motor area; S2, secondary somatosensory area; THS, thalamus; TP, temporal pole.

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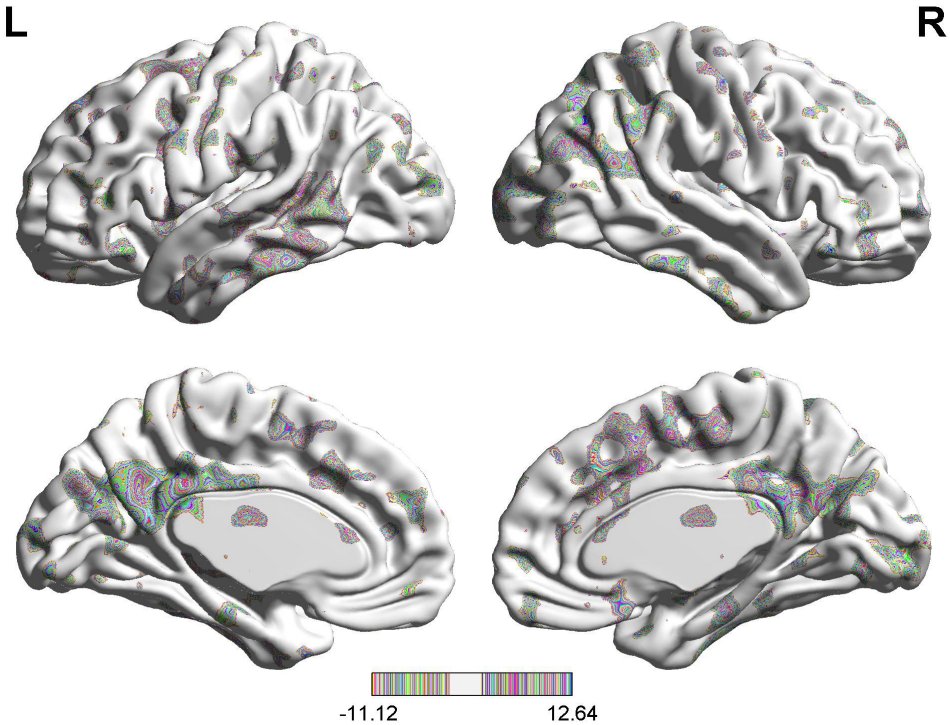

Figure S1 Brain areas showing significantly FC with the ACC in the placebo status in introvert group.

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Brain response of placebo response in extrovert subjects (ROI-voxel)

In the FC network of the ACC, the findings showed that compared with pain status, placebo status displayed increased FC in the PHP, putamen (PUT), THS, rolandic operculum (RO), OFC, hippocampus gyrus (HP), right insular cortex (IC), SMA, and the ventromedial prefrontal cortex (VMPFC). However, the ACC exhibited significantly decreased FC in the fusiform gyrus (FG), CPL, left IC, PCC, and the caudate (CAU) (*Table S2* & *Figure S2*).

Table S2 The locations of the brain areas showing significantly FC with the ACC in placebo response in extrovert subjects. (P<0.05, FDR<0.05)

Brain region	R/L	MNI			Voxel	Z-score
		X	Y	Z		
CPL	L	-30	-69	-24	89	-5.1574
VMPFC	L	-3	54	33	169	8.021
OFC	L	-51	42	-6	140	5.9012
FG	R	42	-69	-18	175	-4.8967
RO	L	-60	6	6	232	9.109
PUT	R	21	-6	-6	157	6.4611
CAU	L	-21	-9	15	119	-5.4231
PCC	L	-24	-63	3	193	-6.0579
THS	L	-9	0	3	78	5.5575
PHP	L	-27	3	-30	69	5.258
HP	L	-27	-12	-9	51	5.2567
IC	L	-24	33	12	82	-5.2257
IC	R	36	3	21	69	4.3767
SMA	L	-21	0	33	473	8.5119

FDR, false discovery rate; MNI, Montreal Neurological Institute. ACC, anterior cingulate cortex; CAU, caudate; CPL, cerebellum posterior lobe; FG, fusiform gyrus; HP, hippocampus gyrus; IC, insular; OFC, orbitofrontal cortex; PCC, posterior cingulate cortex; PHP, parahippocampal gyrus; PUT, putamen; RO, rolandic operculum; SMA, supplementary motor area; THS, thalamus; VMPFC, ventromedial prefrontal cortex.

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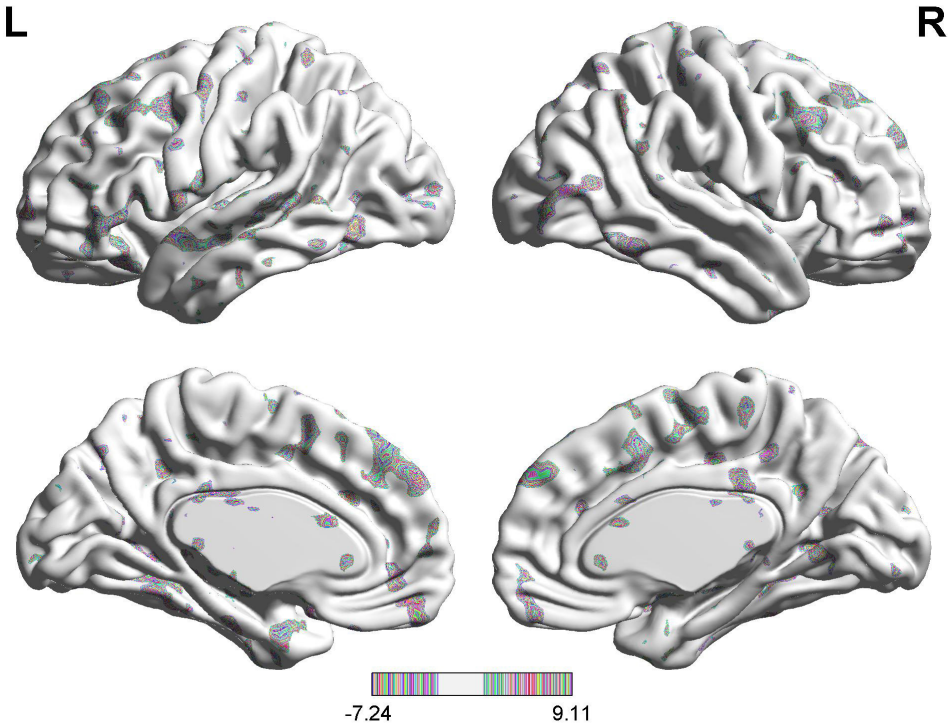

Figure S2 Brain areas showing significantly FC with the ACC in the placebo status in extrovert group.

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Brain response of nocebo effect in introvert subjects (ROI-voxel)

In the FC network of the ACC results, compared with the pain status, the nocebo status displayed increased FC in the angular gyrus (AG), amygdala (AMYG), CAU, and the VMPFC. Nevertheless, the ACC exhibited significantly decreased FC in the CPL, FG, middle temporal lobe (MTL), superior temporal lobe (STL), pregenual anterior cingulate cortex (pgACC), DLPFC, and the primary somatosensory area (S1) (*Table S3* & *Figure S3*).

Table S3 The locations of the brain areas showing significantly FC with the ACC in the nocebo response in introvert group. (P<0.05, FDR<0.05)

Brain region	R/L	MNI			Voxel	Z-score
		X	Y	Z		
CPL	L	-42	-63	-42	207	-5.9129
CPL	R	42	-69	-39	66	-4.651
DLPFC	R	18	48	48	53	-4.4172
VMPFC	R	12	54	0	55	4.9024
VMPFC	L	-15	63	12	77	6.5867
CAU	R	3	-3	0	56	5.2067
FG	L	-42	-18	-33	310	-7.2011
AG	R	21	-57	54	2827	8.8551
pgACC	L	-21	9	21	1092	-8.5985
AMYG	R	15	0	-15	64	6.0078
MTL	L	-54	-18	-6	86	-5.6578
STL	L	-63	-51	3	100	-6.5713
S1	L	-18	-24	57	109	-9.7507

FDR, false discovery rate; MNI, Montreal Neurological Institute. ACC, anterior cingulate cortex; AG, angular gyrus; AMYG, amygdala; CAU, caudate; CPL, cerebellum posterior lobe; DLPFC, dorsolateral prefrontal cortex; FG, fusiform gyrus; MTL, middle temporal lobe; pgACC, pregenual anterior cingulate cortex; STL, superior temporal lobe; S1, primary somatosensory area; VMPFC, ventromedial prefrontal cortex.

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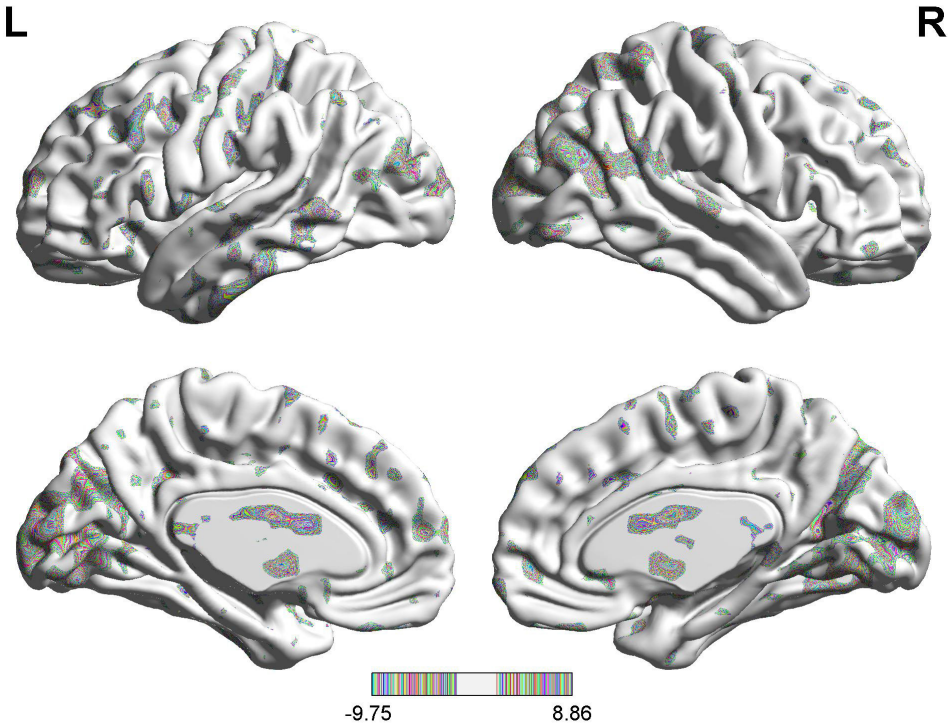

Figure S3 Brain areas showing significantly FC with the ACC in the nocebo status in introvert group.

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Brain response of nocebo effect in extrovert subjects (ROI-voxel)

In the FC network of the ACC results, compared with the pain status, the nocebo status displayed increased FC in the AMYG, OFC, AG, MTL, DLPFC, pgACC, prefrontal cortex (PFC) and S1. However, the ACC exhibited significantly decreased FC in the CPL, PHP, MTL, PCC, and the mid-cingulate cortex (MCC) (*Table S4* & *Figure S4*).

Table S4 The locations of the brain areas showing significantly FC with the ACC in the nocebo response in extrovert group. (P<0.05, FDR<0.05)

Brain region	R/L	MNI			Voxel	Z-score
		X	Y	Z		
CPL	L	-24	-66	-24	186	-6.757
DLPFC	R	42	27	36	246	7.1519
PFC	L	-6	36	57	1031	7.5948
OFC	R	51	48	-9	68	5.1296
pgACC	R	3	12	18	86	6.0886
PCC	L	-15	-33	30	240	-6.1891
MCC	L	-3	-39	48	186	-6.5768
PHP	L	-15	-81	36	1237	-7.7407
PHP	R	21	-48	-9	53	-4.7556
AMYG	R	30	-3	-12	96	5.695
MTL	L	-42	-66	-3	79	-5.3356
MTL	R	27	36	6	63	4.9623
AG	R	48	-57	48	284	5.4723
S1	L	-15	-33	69	106	5.7912

FDR, false discovery rate; MNI, Montreal Neurological Institute. ACC, anterior cingulate cortex; AG, angular gyrus; AMYG, amygdala; CPL, cerebellum posterior lobe; DLPFC, dorsolateral prefrontal cortex; MCC, mid-cingulate cortex; MTL, middle temporal lobe; OFC, orbitofrontal cortex; PFC, prefrontal cortex; pgACC, pregenual anterior cingulate cortex; PCC, posterior cingulate cortex; PHP, parahippocampal gyrus; S1, primary somatosensory area.

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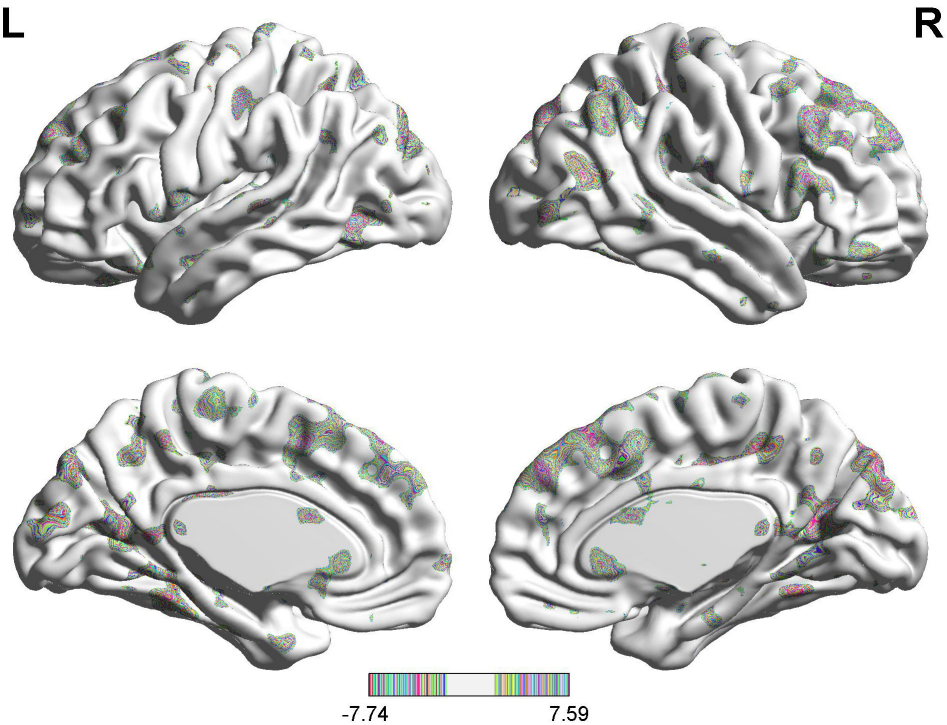

Figure S4 Brain areas showing significantly FC with the ACC in the nocebo status in the extrovert group.

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