Supplemental Materials

TITLE: Interactions between gut permeability and brain structure and function in health and irritable bowel syndrome

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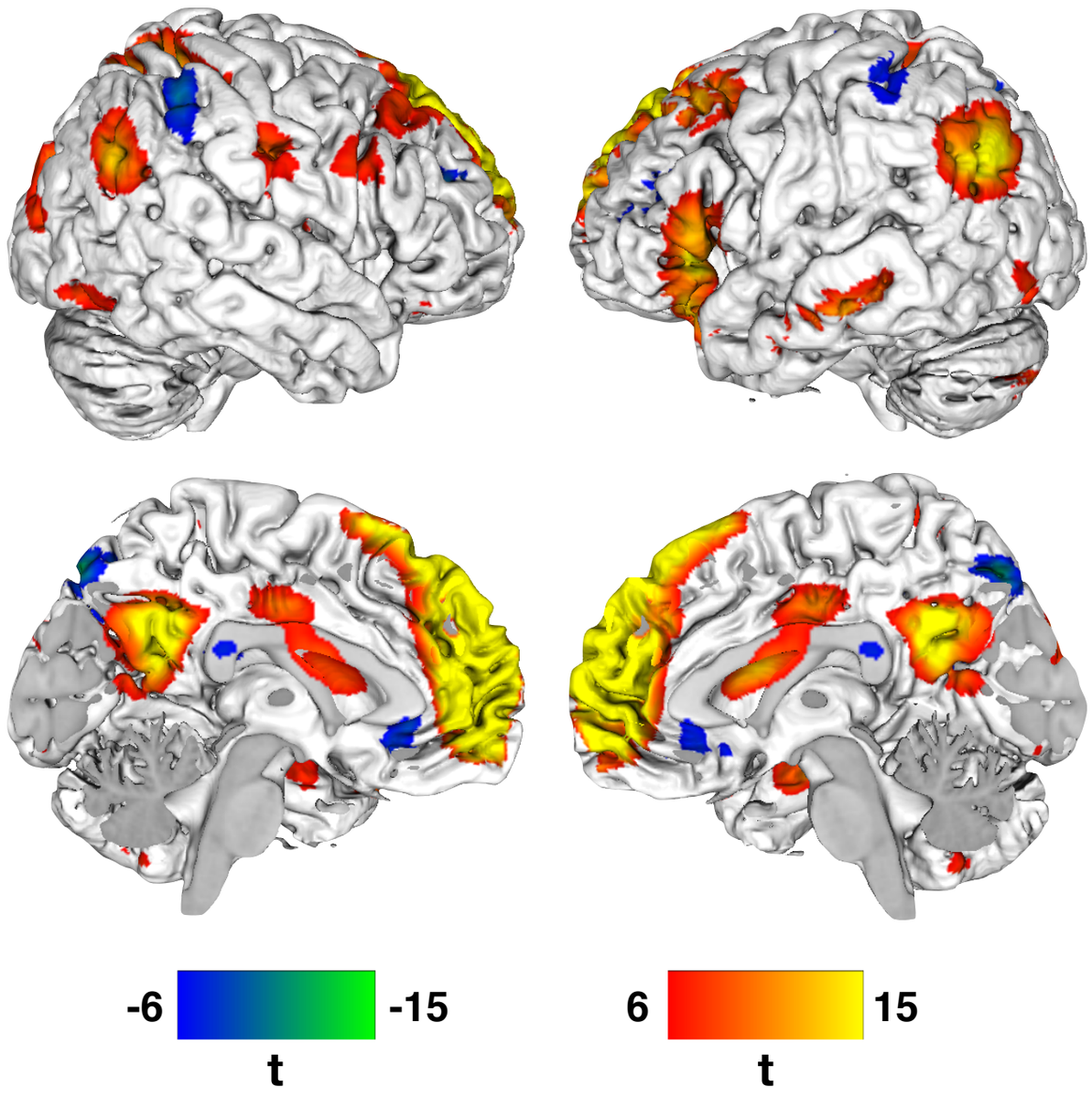

Figure A.1

Table A.1. Peak stereotactic coordinates (MNI) for the whole-brain correlation analysis showing between-group associations for paracellular epithelial permeability of ^{51}Cr-EDTA and DMN resting state functional connectivity.

Region	BA	X	Y	Z	-log10(p)
Positive Group Differences					
Frontal Cortex					
Right Medial Frontal Gyrus		10	56	4	3.7
Left Precentral/Postcentral gyrus		-54	-10	48	1.69
Right Superior Frontal Gyrus		12	46	46	2.3
LeftMiddle Frontal Gyrus		-28	8	54	1.87
Left Middle Frontal Gyrus		-42	14	54	1.35
Left Inferior Frontal Gyrus/Middle Frontal Gyrus		-32	16	26	1.33
Left Superior Frontal Gyrus		-38	48	26	1.33
Right Precentral gyrus		48	-6	52	3.1
Left Middle Frontal Gyrus	9	-40	20	42	1.37
Cingulate Cortex					
Parietal Cortex					
Right Precuneus		10	-60	22	1.55
Left Angular Gyrus		-46	-74	34	1.73
Right Angular Gyrus/Supramarginal Gyrus		60	-48	32	1.48
Left Inferior Parietal Lobe		-66	-28	22	1.5
Right Precuneus		22	-78	48	1.56
Right Postcentral Gyrus		48	-22	30	1.32
Right Postcentral Gyrus		42	-24	32	1.3
Right Paracentral Lobule		10	-32	62	1.94
Left Paracentral Lobule		-8	-34	62	2.8
Temporal Lobe					
Left Superior Temporal Gyrus		-48	18	-24	1.46
Left Superior Temporal Gyrus		-68	-28	4	1.39

Left Superior Temporal Gyrus		-64	0	8	1.42
Left Middle Temporal Gyrus		-60	0	-20	1.31
Left Middle Temporal Gyrus		-60	-38	-8	1.53
Subcortex					
Left Parahippocampus		-22	6	-30	1.72
Left Parahippocampus/Amygdala		-32	-4	-18	1.4
Cerebellum					
Left Posterior Cerebellum (Crus I)		-46	-50	-38	1.67
Posterior Cerebellum		2	-76	-50	1.36
Right Anterior Cerebellum (VI)		38	-44	-34	3
Brainstem					
Left Pons		-18	-30	-36	1.38
Periaqueductal Grey		4	-36	-14	3.22
Right Pons		16	-24	-38	1.92
Negative Group Differences					
Frontal Cortex					
Supplementary Motor Area	6	-2	-10	54	3.4
Left Inferior Frontal Gyrus/Orbital Frontal Cortex		-34	22	-16	2.19
Left Postcentral Gyrus		-54	-18	28	1.78
Right Postcentral Gyrus		56	-24	56	2.36
Left Precentral Gyrus/Inferior Frontal Gyrus		-56	6	16	1.46
Right Inferior Frontal Gyrus		40	30	-22	1.48
Left Postcentral Gyrus		-40	-28	46	1.67
Cingulate Cortex					
Parietal Cortex					
Left Precuneus		-18	-86	46	3.22
Right Parietal Lobe		28	-48	22	3.7

Precuneus		-2	-52	56	1.51
Occipital Lobe					
Right Middle Occipital Gyrus		54	-72	-6	2.19
Right Middle Occipital Gyrus		32	-82	24	1.58
Lingual Gyrus		6	-44	0	1.33
Lingual Gyrus		6	-58	0	1.77
Temporal Lobe					
Right Superior Temporal Lobe		56	-20	-2	2.17
Left Middle Temporal Gyrus		-58	-16	-22	1.73
Right Middle Temporal Gyrus		40	-88	2	1.33
Right Inferior Temporal Gyrus		58	-52	-22	1.35
Subcortex					
Thalamus		0	-12	2	3.4
Right Parahippocampus/Amygdala		14	0	-18	3.7
Right Parahippocampus		38	-18	-26	2.42
Left Parahippocampus		-38	-24	-20	1.96
Parahippocampus		-6	4	-20	1.37
Left Caudate		-14	-10	22	1.37
Cerebellum					
Left Anterior Cerebellum (VI)		-28	-50	-30	1.69
Right Anterior Cerebellum (V)		24	-46	-22	1.9
Left Posterior Cerebellum (Crus II)		-26	-76	-40	1.51
Right Posterior Cerebellum (Crus I)		38	-72	-30	1.32
Posterior Cerebellum (Crus II)		8	-78	-40	1.33
Left Posterior Cerebellum (Crus I)		-46	-74	-34	1.33
Brainstem					
Pons		-10	-36	-42	3.7
Rostral Ventral Medulla		-2	-46	-50	1.3

Table A.2. Peak stereotactic coordinates (MNI) for the whole-brain correlation analysis showing associations between paracellular epithelial permeability of ^{51}Cr-EDTA and DMN resting state functional connectivity in the healthy women.

Region	BA	X	Y	Z	-log10(p)
Postive Correlations					
Frontal Cortex					
Right Middle Frontal Gyrus		32	44	24	3.22
Left Middle Frontal Gyrus/Supplementary Motor Area		-14	-4	64	3.7
Right Precentral/Postcentral Gyrus		38	-26	70	2.55
Left Inferior Frontal Gyrus/Orbital Frontal Gyrus		-40	30	-12	2.8
Right Frontal Lobe		16	10	-18	2.17
Left Insula		-34	-10	20	2.24
Right Inferior Frontal Gyrus		32	22	-24	1.84
Left Precentral/Inferior Frontal Gyrus		-52	-2	20	1.55
Right Inferior Frontal Gyrus		34	12	-16	2.02
Right Inferior Frontal Gyrus		42	22	-18	1.4
Right Inferior Frontal Gyrus/Orbital Frontal Gyrus		34	24	-12	1.39
Cingulate Cortex					
Cingulate Gyrus		6	-30	34	2.49
Left Cingulate Gyrus		-14	-48	28	1.66
Parietal Cortex					
Left Precuneus/Inferior Parietal Lobe		-30	-82	40	3.4
Right Angular Gyrus		48	-58	26	3
Left Precuneus		-12	-40	48	2.14
Right Parietal Lobe/Postcentral Gyrus		56	-26	38	1.93
Left Postcentral Gyrus		-44	-28	62	1.42
Occipital Lobe					
Right Lingual Gyrus		18	-76	-8	2.25

Right Cuneus		30	-92	28	1.95
Cuneus		6	-96	24	2.24
Right Occipital Lobe		24	-84	8	1.54
Right Lingual Gyrus/Parahippocampus		18	-52	4	2.3
Temporal Lobe					
Right Middle Temporal Gyrus		52	-60	0	3.7
Right Superior Temporal Gyrus		56	-28	6	2.12
Left Middle Temporal Gyrus		-58	-10	-4	1.7
Subcortex					
Right Thalamus		8	-12	-2	3.7
Right Parahippocampus		40	-20	-26	2.55
Left Parahippocampus		-34	-16	-32	1.74
Left Parahippocampus		-8	2	-16	2.4
Left Caudate		-12	-10	18	1.49
Left Thalamus		-18	-28	6	1.5
Cerebellum					
Left Anterior Cerebellum (VI)		-30	-36	-38	2.24
Anterior Cerebellum (V)		0	-58	-4	1.76
Right Anterior Cerebellum (VI)		22	-52	-20	1.48
Brainstem					
Pons		0	-16	-28	2.47
Rostral Ventral Medulla		-10	-26	-30	2.08
Negative Correlations					
Frontal Cortex					
Left Inferior Frontal Gyrus/Insula		-50	14	6	2.62
Right Precentral Gyrus		42	-10	46	2.01
Right Precentral Gyrus		48	6	26	1.85
Left Middle Frontal Gyrus		-30	4	58	2.55

Orbital Frontal Cortex		-6	22	-12	1.97
Left Frontal Pole		-40	48	6	1.74
Left Precentral Gyrus		-58	2	38	2.05
Superior Frontal Gyrus		6	38	50	1.44
Left Precentral Gyrus		-50	-12	48	1.46
Left Precentral Gyrus		-54	-6	46	1.33
Cingulate Cortex					
Paracingulate/Cingulate Gyrus		-6	46	-6	2.7
Right Paracingulate Gyrus		12	54	6	3.22
Left Cingulate Gyrus		-10	6	28	2.04
Left Posterior Cingulate Gyrus		-12	-14	32	1.36
Parietal Cortex					
Left Superior Parietal Lobe		-18	-52	56	3.4
Right Superior Parietal Lobe/Angular Gyrus		46	-46	58	2.7
Left Precuneus/Occipital Cortex		-18	-68	36	3
Left Parietal Lobe/Angular Gyrus		-46	-72	34	2.74
Right Precuneus		14	-52	14	1.7
Occipital Lobe					
Left Middle Occipital Gyrus		-28	-70	-2	3.4
Right Fusiform Gyrus		44	-54	-20	2.49
Temporal Lobe					
Right Middle Temporal Gyrus		54	-32	-12	2.8
Left Middle Temporal Gyrus		-62	-40	-4	1.75
Subcortex					
Right Thalamus		8	-12	14	1.8
Left Parahippocampal Gyrus		-22	6	-28	2.74
Cerebellum					

Right Anterior Cerebellum (VI)		12	-66	-16	1.91
Left Posterior Cerebellum (VI)		-36	-60	-24	1.66
Right Posterior Cerebellum (Crus I)		48	-54	-38	1.85
Left Posterior Cerebellum (VI)		-12	-72	-26	1.41
Brainstem					
Periaqueductal Grey		2	-38	-14	3.7
Right Pons		16	-32	-36	2.44

Table A.3. Peak stereotactic coordinates (MNI) for the whole-brain correlation analysis showing associations between paracellular epithelial permeability of ^{51}Cr-EDTA and DMN resting state functional connectivity in the IBS patients.

Region	BA	X	Y	Z	-log10(p)
Postive Correlations					
Frontal Cortex					
Left Middle Frontal Gyrus/Orbital Frontal Cortex		-38	40	-10	3.7
Right Superior Frontal Gyrus		8	46	42	3.4
Right Medial Frontal Gyrus		12	56	4	2.21
Left Inferior Frontal Gyrus		-42	46	10	2.04
Left Frontal Lobe		-16	-28	46	1.75
Right Insula		48	-12	4	1.72
Left Middle Frontal Gyrus		-28	12	52	1.55
Left Inferior Frontal Gyrus		-38	30	-10	2.32
Left Insula		-42	4	4	1.4
Right Precentral Gyrus		62	-4	36	1.46
Right Anterior Cingulate Cortex		16	42	8	1.42
Right Medial Frontal Gyrus		14	36	34	1.34
Cingulate Cortex					
Posterior Cingulate Gyrus		6	-42	18	2.28
Parietal Cortex					
Paracentral Lobule		-2	-28	64	1.74
Left Precuneus/Parietal Lobe	19	-32	-90	34	2.28
Right Superior Parietal Lobe		36	-56	56	1.4
Right Superior Parietal Lobe		40	-32	58	1.61
Right Paracentral Lobule		18	-34	66	1.59
Right Superior Parietal Lobe		28	-66	58	1.38
Left Precuneus/Parietal Lobe		-40	-76	32	1.51
Right Superior Parietal Lobe		46	-46	62	1.41

Right Paracentral Lobule		12	-30	66	1.37
Right Superior Parietal Lobe		42	-32	52	1.3
Occipital Lobe					
Cuneus		-6	-92	6	2.01
Right Fusiform Gyrus		46	-66	-20	2.3
Right Calcarine/Posterior Cingulate		8	-60	14	1.81
Left Cuneus		-8	-98	-2	2.08
Right Middle Occipital Gyrus		50	-70	-14	1.42
Temporal Lobe					
Right Superior Temporal Gyrus		58	12	-12	2.24
Right Inferior Temporal Gyrus		48	-50	-8	1.99
Right Inferior Temporal Gyrus		42	-54	-6	2.92
Right Middle Temporal Gyrus		34	4	-36	1.66
Right Middle Temporal Gyrus		52	-24	-14	1.52
Right Inferior Temporal Gyrus/Middle Occipital Gyrus		44	-62	-6	1.31
Right Superior Temporal Gyrus		40	16	-40	1.32
Subcortex					
Right Putamen		32	8	8	2.12
Left Parahippocampus		-34	-44	-6	2.42
Right Caudate		22	18	8	1.36
Left Parahippocampus		-22	4	-30	1.3
Cerebellum					
Right Posterior Cerebellum (IX)		10	-50	-50	3.7
Posterior Cerebellum (VI)		-6	-74	-12	1.76
Right Anterior Cerebellum (Crus I)		42	-46	-34	1.99
Right Anterior Cerebellum (VI)		16	-68	-14	1.68
Right Posterior Cerebellum (V)		8	-56	-22	1.4
Left Anterior Cerebellum (IX)		-12	-48	-40	1.43

Brainstem					
Negative Correlations					
Frontal Cortex					
Right Supplementary Motor Area		8	0	52	1.97
Right Middle Frontal Gyrus		32	46	28	2.92
Left Insula/Putamen		-24	6	-6	2.1
Superior Frontal Lobe		-6	48	32	1.77
Right Superior Frontal Gyrus		32	22	60	1.76
Right Precentral Gyrus		28	-20	76	2.42
Left Inferior Frontal Gyrus		-56	24	-6	3.1
Right Medial Frontal Gyrus		22	54	36	1.66
Right Inferior Frontal Gyrus		26	26	-10	1.63
Right Inferior Frontal Gyrus	47	30	30	-10	1.43
Left Inferior Frontal Gyrus	47	-30	26	-20	1.32
Left Middle Frontal Gyrus		-24	28	36	1.34
Cingulate Cortex					
Parietal Cortex					
Right Postcentral Gyrus		62	-14	20	3
Left Postcentral Gyrus		-52	-32	36	2.09
Left Postcentral Gyrus		-30	-32	44	2.14
Left Precuneus		-18	-90	40	1.6
Right Postcentral Gyrus		52	-22	58	1.34
Right Parietal Lobe/Angular Gyrus		42	-40	32	1.31
Occipital Lobe					
Right Lingual Gyrus		30	-78	-6	1.84
Cuneus		-4	-96	28	1.5
Temporal Lobe					
Left Superior Temporal Lobe		-30	-54	20	2.92

Left Middle Temporal Gyrus		-62	-10	-18	2.03
Subcortex					
Right Parahippocampus/Amygdala		16	2	-28	3.7
Right Thalamus		8	-4	-2	1.59
Right Caudate		8	14	6	1.91
Left Parahippocampus		-10	0	-18	1.47
Left Thalamus		-12	-20	0	1.34
Left Parahippocampus		-34	-16	-30	1.32
Left Parahippocampus		-34	-20	-30	1.34
Right Parahippocampus		36	-20	-30	1.3
Cerebellum					
Left Anterior Cerebellum (VI)		-30	-52	-32	3.7
Left Anterior Cerebellum (V)		-16	-54	-16	1.5
Brainstem					
Rostral Ventral Medulla		8	-30	-44	3.7

Table A.4. Peak stereotactic coordinates (MNI) for the whole-brain correlation analysis showing between-group associations for transcellular epithelial permeability of *Salmonella typhimurium* and DMN resting state functional connectivity.

Region	BA	X	Y	Z	-log10(p)
Positive Group Differences					
Frontal Cortex					
Left Superior Frontal Gyrus		-22	60	-2	2.62
Left Middle Frontal Gyrus		-44	26	26	1.87
Right Superior Frontal/Medial Frontal Gyrus		14	38	40	1.85
Cingulate Cortex					
Right Cingulate Gyrus		18	-44	22	1.44
Parietal Cortex					
Left Parietal Lobe		-24	-50	26	3.7
Left Precuneus		-12	-46	56	1.65
Left Superior Parietal Lobe		-32	-56	62	1.39
Right Paracentral Lobule		-8	-28	76	1.39
Left Precuneus		-18	-60	50	1.43
Precuneus/Postcentral		-4	-58	70	1.32
Precuneus/Postcentral		-4	-54	72	1.34
Occipital Lobe					
Right Occipital Lobe		8	-94	10	1.69
Calcarine		6	-64	12	1.69
Left Cuneus		-22	-80	20	1.31
Temporal Lobe					
Right Middle Temporal Lobe		58	-52	10	2.44
Right Superior Temporal Gyrus		40	18	-38	3.7
Left Superior Temporal Gyrus		-60	8	-10	1.8
Subcortex					

Cerebellum					
Right Posterior Cerebellum (Crus II)		42	-56	-44	2.74
Right Posterior Cerebellum		34	-82	-24	1.63
Brainstem					
Rostral Ventral Medulla		0	-40	-50	2.04
Negative Group Differences					
Frontal Cortex					
Right Inferior Frontal Gyrus/Orbital Frontal Gyrus		42	32	0	2.19
Right Inferior Frontal Gyrus/Precentral Gyrus		56	10	14	1.81
Superior Frontal Gyrus		-4	30	62	1.91
Anterior Cingulate Cortex		-2	16	30	1.71
Left Middle Frontal Gyrus		-30	38	-18	2.03
Middle Cingulate Gyrus/Supplementary Motor Area		-4	-8	52	1.42
Left Superior Frontal Gyrus		-20	0	74	2.1
Left Medial Frontal Gyrus/Anterior Cingulate Cortex		-8	44	14	1.59
Left Inferior Frontal Gyrus/Orbital Frontal Gyrus		-48	28	-16	1.77
Left Insula		-38	2	18	1.39
Left Middle/Superior Frontal Gyrus		-30	56	26	1.43
Left Medial Frontal Gyrus		-14	64	22	1.4
Right Middle Frontal Gyrus		34	24	54	1.32
Left Middle Frontal Gyrus		-30	28	-6	1.33
Right Precentral Gyrus		14	-28	68	1.32
Left Inferior Frontal Gyrus		-48	20	-4	1.3
Cingulate Cortex					
Parietal Cortex					
Right Superior Parietal Lobe		30	-46	42	2.25
Right Postcentral Gyrus		68	-10	14	1.61
Left Postcentral Gyrus		-66	-26	34	1.7

Left Postcentral Gyrus		-50	-12	24	1.63
Left Postcentral Gyrus		-38	-28	42	1.51
Left Inferior Parietal Lobe		-36	-42	48	1.69
Occipital Lobe					
Lingual Gyrus/Cingulate Gyrus		6	-44	2	2.55
Right Middle Occipital Gyrus		52	-70	2	3.1
Right Lingual Gyrus/Cingulate Gyrus		22	-92	22	1.6
Right Occipital Lobe/Lingual Gyrus		24	-70	-14	1.49
Right Occipital Lobe		22	-104	-2	1.67
Left Middle Occipital Gyrus		-46	-88	4	1.39
Temporal Lobe					
Left Middle Temporal Gyrus/Lateral Occipital Cortex		-42	-66	8	2.8
Left Inferior Temporal Lobe		-56	-42	-22	1.9
Left Inferior Temporal Lobe		-34	-4	-40	2.09
Right Middle Temporal Gyrus		70	-42	-4	1.58
Right Middle Temporal Gyrus		68	-18	-18	1.63
Right Superior Temporal Lobe		70	-26	4	1.42
Right Middle Temporal Gyrus		38	-58	20	1.32
Left Temporal Occipital Fusiform Cortex		-40	-62	-18	1.32
Left Middle Temporal Gyrus		-8	-82	-14	1.32
Subcortex					
Right Parahippocampus/Hippocampus		12	-6	-6	1.32
Cerebellum					
Left Posterior Cerebellum (Crus I)		-30	-72	-28	1.54
Right Posterior Cerebellum (Crus I)		44	-68	-32	1.47
Right Posterior Cerebellum (Crus II)		8	-84	-26	1.39
Left Posterior Cerebellum (Crus II)		-36	-82	-40	1.35
Brainstem					

Pons/Hypothalamus		2	-4	-22	1.46

Table A.5. Peak stereotactic coordinates (MNI) for the whole-brain correlation analysis showing associations between transcellular epithelial permeability of *Salmonella typhimurium* and DMN resting state functional connectivity in the healthy women.

Region	BA	X	Y	Z	-log10(p)
Postive Correlations					
Frontal Cortex					
Right Inferior Frontal Gyrus		40	32	2	2.55
Right Inferior Frontal Gyrus		60	16	6	2.25
Right Precentral/Postcentral Gyrus		62	-6	14	3.4
Superior Frontal Gyrus		-4	24	60	3.1
Left Anterior Cingulate Cortex		-16	42	12	2.62
Left Insula		-36	-30	14	3.1
Left Superior Frontal Gyrus		-18	-4	68	2.36
Left Middle Frontal Gyrus/Inferior Frontal Gyrus		-30	38	-18	1.93
Left Inferior Frontal Gyrus/Orbital Frontal Gyrus		-50	28	-14	1.94
Cingulate Cortex					
Cingulate Gyrus/Anterior Cingulate Cortex		-6	14	24	3.4
Parietal Cortex					
Right Superior Parietal Lobe		56	-40	32	2.92
Left Inferior Parietal Lobe		-36	-36	48	3.4
Left Postcentral Gyrus		-50	-12	22	2.24
Occipital Lobe					
Left Lingual Gyrus		-16	-70	-12	2.3
Right Lingual Gyrus		22	-72	-16	1.55
Temporal Lobe					
Left Middle Temporal Gyrus		-28	-64	2	3.7
Left Inferior Temporal Lobe		-48	-54	-20	3.1
Right Middle Temporal Gyrus	37	54	-68	2	3.7

Left Inferior Temporal Lobe		-38	0	-32	1.97
Right Middle Temporal Gyrus/Angular Gyrus		36	-62	24	1.65
Subcortex					
Right Parahippocampus		20	-28	-20	3.7
Cerebellum					
Left Posterior Cerebellum (VI/Crus I)		-32	-68	-24	1.6
Left Posterior Cerebellum (Crus I)		-22	-80	-26	1.55
Brainstem					
Brainstem (PAG)		-4	-10	-14	2.12
Negative Correlations					
Frontal Cortex					
Left Superior Frontal Gyrus		-24	58	-2	3.7
Left Superior Frontal Gyrus		-16	38	32	3.4
Right Medial Frontal Gyrus		14	38	38	3.7
Cingulate Cortex					
Posterior Cingulate		6	-62	8	3.7
Right Cingulate Gyrus		22	-52	32	2.42
Right Posterior Cingulate		10	-54	24	1.36
Parietal Cortex					
Left Parietal Lobe/Postcentral Gyrus		-22	-44	68	2.92
Left Superior Parietal Lobe		-32	-54	58	1.7
Occipital Lobe					
Occipital Lobe		4	-86	12	3.1
Left Middle Occpital Gyrus		-30	-90	-18	2.55
Left Occipital Lobe		-26	-98	20	2.7
Temporal Lobe					

Right Middle Temporal Gyrus		44	-50	6	3.4
Right Superior Temporal Gyrus		40	16	-40	3.7
Left Superior Temporal Gyrus		-60	4	0	3.22
Subcortex					
Cerebellum					
Left Anterior Cerebellum (VI)		-20	-58	-28	3.7
Right Posterior Cerebellum (VIIb)		34	-54	-46	3.7
Left Posterior Cerebellum (Crus II)		-36	-62	-44	2.11
Right Posterior Cerebellum (Crus I)		32	-82	-26	3.1
Brainstem					
Rostral Ventral Medulla		0	-42	-50	3.4

Table A.6. Peak stereotactic coordinates (MNI) for the whole-brain correlation analysis showing associations between paracellular epithelial permeability of *Salmonella typhimurium* and DMN resting state functional connectivity in the IBS patients.

Region	BA	X	Y	Z	-log10(p)
Postive Correlations					
Frontal Cortex					
Right Middle Frontal Gyrus		38	10	40	3.1
Superior Medial Frontal Gyrus		-2	64	16	3
Right Medial Frontal Gyrus/Supplementary Motor Area		12	-8	56	1.79
Right Superior Frontal Gyrus		16	38	44	1.53
Supplementary Motor Area		-4	-10	58	1.49
Left Middle Frontal Gyrus		-18	42	-14	1.42
Right Precentral Gyrus		64	-6	36	1.4
Right Inferior Frontal Gyrus		40	30	-4	1.39
Right Precentral Gyrus		42	-8	44	1.35
Cingulate Cortex					
Cingulate Gyrus		6	-20	30	1.84
Right Posterior Cingulate		10	-54	24	2.24
Cingulate Gyrus/Anterior Cingulate Cortex		-6	14	32	1.49
Cingulate Gyrus		-6	-20	26	1.36
Parietal Cortex					
Left Postcentral Gyrus		-56	-24	36	1.6
Left Precuneus		-16	-62	48	1.91
Left Superior Parietal Lobe		-32	-54	60	2.25
Left Precuneus		-28	-62	36	1.3
Occipital Lobe					
Right Lingual Gyrus		8	-64	-2	2.74
Temporal Lobe					

Left Middle Temporal Gyrus		-58	-64	-10	1.75
Left Middle Temporal Gyrus		-64	-48	24	1.37
Subcortex					
Right Parahippocampus		18	-20	-20	1.45
Left Hippocampus		-38	-20	-18	1.54
Cerebellum					
Left Anterior Cerebellum (I-IV)		-10	-40	-20	3.7
Left Posterior Cerebellum (VIIIb)		-22	-44	-50	2.49
Left Posterior Cerebellum (Crus II)		-34	-58	-42	1.97
Right Posterior Cerebellum (VIIIa/VIIIb)		24	-48	-48	1.35
Right Posterior Cerebellum (Crus I)		32	-82	-26	1.33
Brainstem					
Negative Correlations					
Frontal Cortex					
Left Insula		-30	-14	16	2.55
Right Inferior Frontal Gyrus		62	12	30	2.36
Right Inferior Frontal Gyrus		58	10	20	1.73
Medial Frontal Gyrus		2	60	0	1.63
Right Middle Frontal Gyrus		46	4	56	2.09
Anterior Cingulate Cortex		0	16	20	1.5
Left Precentral/Postcentral Gyrus		-48	-8	24	1.97
Left Medial Frontal Gyrus		-22	56	8	1.53
Right Supplementary Motor Area		10	12	50	1.45
Left Rolandic Operculum		-48	-26	18	1.56
Cingulate Cortex					
Parietal Cortex					
Right Inferior Parietal Lobe		52	-36	42	2.85

Right Precuneus		14	-42	4	2.32
Left Inferior Parietal Lobe		-50	-44	30	1.9
Left Postcentral Gyrus		-38	-24	40	1.45
Right Postcentral Gyrus		64	-14	18	1.36
Occipital Lobe					
Right Calcarine		16	-86	0	2.38
Right Lingual Gyrus		28	-58	-4	1.87
Temporal Lobe					
Left Middle Temporal Gyrus		-36	-4	-38	1.64
Left Superior Temporal Gyrus		-66	-44	6	1.31
Subcortex					
Cerebellum					
Right Anterior Cerebellum (I-IV)		12	-42	-26	1.63
Left Anterior Cerebellum (I-IV)		-10	-42	-28	1.71
Brainstem					
Brainstem (PAG?)		-4	-10	-14	2.66

Table A.7. Peak stereotactic coordinates (MNI) for the whole-brain correlation analysis showing between-group associations between paracellular epithelial permeability of ^{51}Cr-EDTA and whole-brain fractional anisotropy.

Tract	X	Y	Z	-log10(p)
Positive Group Differences				
Association Fibers				
Cingulum (cingulate gyrus) L	-9	33	14	1.56
	-7	-10	35	1.35
	-7	8	33	1.39
	-11	-35	37	1.32
Cingulum (cingulate gyrus) R	11	27	20	1.49
	11	29	18	1.6
	10	17	26	1.39
	9	-34	33	1.52
Cingulum (hippocampus) L	-22	-21	-23	3
	-13	-44	2	1.91
Cingulum (hippocampus) R	17	-42	1	1.96
	26	-20	-26	1.82
Fornix (cres) / Stria terminalis (can not be resolved with current resolution) R	32	-13	-12	1.5
Sagittal stratum (include inferior longitidinal fasciculus and inferior fronto-occipital fasciculus) L	-37	-51	-7	1.34
Sagittal stratum (include inferior longitidinal fasciculus and inferior fronto-occipital fasciculus) R	39	-18	-9	1.33
Superior fronto-occipital fasciculus (could be a part of anterior internal capsule) L	-21	4	20	2.62
	-21	-3	22	1.37
Superior fronto-occipital fasciculus (could be a part of anterior internal capsule) R	22	2	21	1.5
	22	-1	22	1.34
Superior longitudinal fasciculus L	-31	-30	25	2.55
	-50	-15	30	2.1
Superior longitudinal fasciculus R	34	-38	34	1.54
	38	-38	27	1.32
	36	-41	30	1.32
	40	-45	6	2.4

Uncinate fasciculus R	34	0	-16	1.48
Commissural Fibers				
Body of corpus callosum	-10	-23	27	2.42
	1	-11	25	1.55
	-6	-1	26	1.39
	0	2	25	1.39
	-5	-3	26	1.36
	7	13	22	1.3
	1	-20	24	1.37
Corticospinal tract R	4	-26	-38	2.85
	7	-23	-25	1.84
Genu of corpus callosum	10	22	18	1.71
	3	23	14	1.36
Splenium of corpus callosum	16	-41	11	1.91
	27	-54	13	1.92
	-13	-48	24	1.85
	-12	-50	17	1.56
	13	-47	29	2.08
	-14	-41	20	1.37
	-4	-36	15	1.52
	25	-50	18	1.35
	-4	-37	17	1.3
Projection Fibers				
Anterior corona radiata L	-24	20	8	2.52
	-22	33	15	1.78
	-20	37	4	1.82
	-21	24	-4	1.52
	-23	37	-4	1.33
	-19	36	8	1.38
Anterior corona radiata R	24	19	11	1.34
	22	23	26	2.3

	13	33	-12	1.36
	27	22	17	1.32
	23	32	18	1.32
	23	26	25	2.92
Anterior limb of internal capsule L	-18	19	-2	2.66
	15	13	-1	2.09
	20	21	0	1.6
	19	11	10	1.42
	21	14	11	1.31
Cerebral peduncle L	-8	-31	-7	2.49
	-7	-19	-18	1.93
	-18	-16	-8	1.42
	-5	-13	-14	1.31
Cerebral peduncle R	8	-20	-12	3.1
	12	-4	-8	2.49
	14	-14	-13	1.71
	8	-15	-18	1.59
	5	-23	-20	1.42
	10	-22	-17	1.36
	13	-19	-18	1.3
	10	-22	-14	1.32
	13	-17	-6	1.75
External capsule R	32	-15	-3	1.97
Inferior cerebellar peduncle L	-7	-43	-43	1.56
Inferior cerebellar peduncle R	12	-41	-40	2.11
	9	-40	-36	1.34
Medial lemniscus R	6	-34	-29	1.65
	4	-37	-39	1.39
	6	-39	-38	1.32
Middle cerebellar peduncle	20	-60	-30	2.74
	-16	-28	-32	2.62
	-19	-66	-38	2.8
	17	-45	-39	1.99

	-34	-48	-39	2.27
	-11	-40	-39	1.74
	18	-29	-34	1.72
	-23	-55	-40	1.98
	16	-48	-30	1.42
	20	-51	-39	1.73
	-16	-48	-31	1.36
	30	-54	-42	1.57
	-15	-46	-31	1.34
	-10	-33	-35	1.61
	16	-32	-37	1.32
	11	-35	-41	1.44
Pontine crossing tract (a part of MCP)	-2	-27	-23	1.58
Posterior corona radiata L	-18	-46	35	1.52
	-21	-35	33	1.6
	-31	-40	20	1.63
Posterior corona radiata R	20	-31	36	1.86
	27	-30	24	1.47
	27	-30	20	1.32
Posterior limb of internal capsule L	-21	-12	7	1.49
	-22	-16	1	1.55
Posterior limb of internal capsule R	20	-19	-7	1.91
	19	-11	2	1.37
	17	-19	-3	1.42
Posterior thalamic radiation (include optic radiation) L	-37	-42	6	1.32
Posterior thalamic radiation (include optic radiation) R	30	-57	15	1.37
	40	-50	-1	1.67
	33	-46	18	2.05
	31	-67	8	1.32
Retrolenticular part of internal capsule L	-27	-32	21	2.08
	-34	-31	-2	3.7
	-34	-39	10	1.34
Retrolenticular part of internal capsule R	28	-27	2	1.4

Superior cerebellar peduncle R	8	-34	-23	2.17
	6	-36	-18	2.44
Superior corona radiata L	-20	-8	38	1.36
	-21	8	24	1.48
Superior corona radiata R	25	4	20	1.3
Negative Group Differences				
Association Fibers				
Superior longitudinal fasciculus L	-43	-52	5	1.64
Commissural Fibers				
Splenium of corpus callosum	18	-47	19	1.57
	19	-45	22	1.4
	22	-48	15	1.54
	9	-40	20	1.87
Projection Fibers				
Anterior corona radiata L	-20	27	21	2.22
Corticospinal tract R	7	-31	-41	1.37
Pontine crossing tract (a part of MCP)	-2	-30	-34	1.41
Posterior corona radiata L	-26	-44	29	1.65
Posterior thalamic radiation (include optic radiation) R	33	-49	13	1.69
	35	-50	16	1.42
Superior corona radiata R	24	-1	34	1.64
	24	-17	36	1.31

Table A.8. Peak stereotactic coordinates (MNI) for the whole-brain correlation analysis showing associations between paracellular epithelial permeability of ^{51}Cr-EDTA and whole-brain fractional anisotropy in the healthy women.

Tract	X	Y	Z	-log10(p)
Positive Correlations				
Association Fibers				
Fornix (column and body of fornix)	-1	-16	20	2.62
Fornix (cres) / Stria terminalis (can not be resolved with current resolution) L	-28	-32	2	3.4
Fornix (cres) / Stria terminalis (can not be resolved with current resolution) R	28	-24	-7	1.58
Sagittal stratum (include inferior longitidinal fasciculus and inferior fronto-occipital fasciculus) L	-41	6	-26	3.7
	-39	-47	-3	1.31
Sagittal stratum (include inferior longitidinal fasciculus and inferior fronto-occipital fasciculus) R	41	-28	-15	3.22
	38	-49	-3	1.41
Superior fronto-occipital fasciculus (could be a part of anterior internal capsule) L	-21	2	21	3.1
Superior longitudinal fasciculus L	-37	-40	17	3.22
	-34	2	28	2.52
	-49	-15	31	2.55
	-43	-8	25	1.4
Superior longitudinal fasciculus R	36	17	22	2.85
	38	-43	26	3.7
	44	-43	3	2.92
	36	-44	30	1.58
	37	-16	27	1.35
	34	-38	34	1.38
	40	-54	7	1.55
	44	-50	1	1.87
	33	-3	20	1.35
	41	-52	5	1.34
Commissural Fibers				
Body of corpus callosum	0	-30	22	2.85
	-10	-4	29	3

	10	3	28	2.47
	11	-7	29	2.22
	-8	14	22	2.36
	-2	3	25	2.66
	-4	-8	26	1.53
	7	-29	22	1.46
	-12	14	25	1.39
Genu of corpus callosum	10	22	19	2.66
	-8	32	3	1.91
	5	28	9	1.48
Splenium of corpus callosum	13	-27	28	3.4
	-20	-44	33	3
	-22	-52	13	2.18
	-17	-35	29	1.57
Projection Fibers				
Anterior corona radiata L	-15	20	-13	3.1
	-23	28	2	2.62
	-25	29	11	1.75
	-24	21	6	1.75
	-21	33	16	2.59
	-24	33	-2	1.99
	-22	31	18	1.79
	-23	37	-4	1.67
Anterior corona radiata R	27	26	15	2.62
Anterior limb of internal capsule L	-14	12	-1	1.94
Cerebral peduncle R	13	-26	-14	1.97
	19	-20	-8	1.37
Corticospinal tract L	-9	-19	-21	2.59
	-11	-25	-27	1.42
Corticospinal tract R	8	-24	-32	2.7
External capsule L	-30	-16	14	3.22
	-34	0	1	1.67

	-33	-13	1	1.64
	-34	-3	1	1.49
Inferior cerebellar peduncle R	12	-44	-36	2.27
	13	-42	-39	1.68
Middle cerebellar peduncle	23	-49	-35	2.18
	21	-62	-33	3.22
	-21	-45	-37	2.59
	22	-56	-32	2.55
	-22	-51	-33	3
	-17	-53	-30	1.85
	-14	-35	-30	1.55
	-16	-28	-32	1.63
	-25	-52	-36	1.45
	-25	-44	-38	2.38
	17	-49	-30	1.94
	-19	-53	-30	1.48
	-18	-45	-34	1.58
	11	-27	-38	2.09
Posterior corona radiata L	-33	-64	27	2.85
	-27	-33	22	3.7
Posterior corona radiata R	12	-61	32	3.4
	19	-34	36	3.7
Posterior limb of internal capsule L	-21	-12	7	1.67
Posterior limb of internal capsule R	23	-20	3	1.62
	26	-11	16	1.41
Posterior thalamic radiation (include optic radiation) L	-35	-59	-2	2.32
	-37	-47	1	1.74
	-31	-67	0	1.43
	-30	-62	0	1.38
	-36	-54	1	1.32
	-37	-41	0	1.38
Posterior thalamic radiation (include optic radiation) R	34	-60	2	3.1
	28	-56	14	2.74

	38	-46	0	1.47
	35	-56	13	2.34
	36	-56	8	1.61
Retrolenticular part of internal capsule L	-38	-35	5	1.78
Retrolenticular part of internal capsule R	39	-26	-4	3.4
	39	-31	-2	2.85
Superior cerebellar peduncle R	6	-36	-18	3.4
Superior corona radiata L	-28	-9	18	1.48
Superior corona radiata R	30	-3	19	2.21
	30	-10	23	2.15
	27	-6	19	1.43
Negative Correlations				
Association Fibers				
Superior longitudinal fasciculus L	-43	-51	4	1.5
Projection Fibers				
Posterior thalamic radiation (include optic radiation) R	33	-50	13	1.97
Superior corona radiata R	25	-1	34	1.85
	23	-17	36	1.39

Table A.9. Peak stereotactic coordinates (MNI) for the whole-brain correlation analysis showing associations between paracellular epithelial permeability of ^{51}Cr-EDTA and whole-brain fractional anisotropy in the IBS patients.

Tract	X	Y	Z	-log10(p)
Positive Correlations				
Association Fibers				
Superior longitudinal fasciculus L	-42	-52	3	2.55
Commissural Fibers				
Splenium of corpus callosum	14	-37	24	1.34
Projection Fibers				
Middle cerebellar peduncle	-23	-44	-37	1.44
Posterior thalamic radiation (include optic radiation) R	29	-61	17	1.39
Posterior thalamic radiation (include optic radiation) R	33	-50	13	1.38
Negative Correlations				
Association Fibers				
Cingulum (hippocampus) L	-26	-24	-23	2.85
Fornix (cres) / Stria terminalis (can not be resolved with current resolution) L	-31	-29	-2	1.73
	-27	-33	-1	1.47
	-19	-35	7	1.8
	-27	-31	2	1.34
Sagittal stratum (include inferior longitidinal fasciculus and inferior fronto-occipital fasciculus) L	-34	-43	3	2.52
	-35	-21	-6	2.11
Sagittal stratum (include inferior longitidinal fasciculus and inferior fronto-occipital fasciculus) R	44	-9	-18	2.85
	41	-43	-5	2.25
Superior fronto-occipital fasciculus (could be a part of anterior internal capsule) L	-21	4	20	1.89
Superior longitudinal fasciculus R	40	-43	18	1.44
	32	0	19	1.48
Commissural Fibers				

Body of corpus callosum	13	-30	28	1.32
	14	-25	29	1.35
Genu of corpus callosum	4	28	10	1.69
Splenium of corpus callosum	-15	-36	27	1.91
	-20	-46	26	2.06
	-15	-51	25	3.7
Projection Fibers				
Anterior corona radiata L	-25	18	6	3.4
	-15	21	-13	2.92
	-24	31	4	1.3
Anterior corona radiata R	23	19	9	2.59
Anterior limb of internal capsule L	-15	13	0	3.7
Anterior limb of internal capsule R	13	11	1	1.31
	20	19	0	1.4
Cerebral peduncle R	12	-4	-8	2.74
	18	-21	-6	1.85
	18	-12	-6	1.72
	14	-25	-13	2.17
	14	-15	-14	1.65
Corticospinal tract L	-10	-25	-25	1.73
Corticospinal tract R	5	-27	-35	2.62
External capsule L	-31	-14	11	3.4
	-30	-4	15	3.7
	-32	-6	8	2.4
	-34	-1	1	2.03
	-34	-3	1	2.18
External capsule R	32	-4	10	3.7
Inferior cerebellar peduncle R	12	-41	-40	2.62
	11	-43	-36	1.6
Middle cerebellar peduncle	-14	-24	-29	3
	-18	-56	-30	1.46
	-14	-32	-28	1.32

	19	-56	-30	1.56
Posterior corona radiata L	-27	-33	21	1.92
Posterior corona radiata R	20	-50	29	1.35
	23	-41	37	1.4
Posterior limb of internal capsule L	-27	-26	18	1.65
	-22	-13	7	1.41
Posterior limb of internal capsule R	22	-15	2	1.58
	28	-18	18	1.34
	19	-11	2	2.47
Posterior thalamic radiation (include optic radiation) L	-30	-69	2	1.63
	-38	-54	2	1.67
	-34	-59	11	1.39
	-34	-45	6	1.3
Posterior thalamic radiation (include optic radiation) R	33	-66	0	2
	37	-53	-3	1.56
	34	-59	5	1.79
	36	-56	8	1.52
	36	-62	1	1.33
	34	-43	14	1.81
Retrolenticular part of internal capsule L	-30	-29	9	1.96
	-30	-37	15	3.7
	-29	-34	14	2.4
Retrolenticular part of internal capsule R	35	-33	10	1.33
Superior cerebellar peduncle R	6	-36	-18	1.38
Superior corona radiata L	-28	-14	18	1.54
Superior corona radiata R	26	-15	23	1.38
	25	-10	22	1.37
	28	-16	23	1.32
	30	-13	24	1.34

Table A.10. Peak stereotactic coordinates (MNI) for the whole-brain correlation analysis showing between-group associations between transcellular epithelial permeability of *Salmonella typhimurium* and whole-brain fractional anisotropy.

Tract	X	Y	Z	-log10(p)
Positive Group Differences				
Association Fibers				
Cingulum (cingulate gyrus) L	-8	10	31	1.81
Cingulum (cingulate gyrus) R	8	3	35	1.49
	7	7	34	1.41
	11	-21	35	2.08
	8	-3	36	1.42
Fornix (column and body of fornix)	5	-19	17	1.87
	2	0	6	1.74
	0	3	4	1.91
	0	-3	12	1.31
	0	3	10	1.34
Fornix (cres) / Stria terminalis (can not be resolved with current resolution) L	-25	-31	2	1.39
Sagittal stratum (include inferior longitidinal fasciculus and inferior fronto-occipital fasciculus) L	-43	-27	-10	1.33
	-43	-24	-11	1.3
	-44	-25	-14	1.31
Superior fronto-occipital fasciculus (could be a part of anterior internal capsule) R	24	5	19	1.74
Superior longitudinal fasciculus L	-35	6	23	2.13
	-32	-20	25	1.49
	-37	-36	29	1.38
	-41	-49	8	1.48
Superior longitudinal fasciculus R	43	-50	2	1.94
	40	-41	13	1.73
	41	-43	17	1.35
	40	-52	11	1.31
	39	-41	25	1.3
	40	-45	6	1.62
	34	-40	27	1.77

	36	-33	27	1.44
Commissural Fibers				
Body of corpus callosum	11	-9	29	1.73
	-8	-20	26	1.55
	7	-21	26	1.55
	11	-21	28	1.46
	-3	-18	25	1.39
	14	-6	38	1.43
	12	-4	35	1.77
Genu of corpus callosum	-6	23	-4	1.53
	8	25	-5	1.35
Splenium of corpus callosum	-18	-46	11	1.52
	-23	-53	17	1.52
	-14	-47	17	2.49
	-10	-43	16	1.82
	-14	-41	11	1.64
	23	-48	17	1.53
	15	-41	19	1.56
	18	-44	27	1.33
	19	-46	13	1.52
	9	-41	16	1.45
	16	-46	22	1.31
	-17	-45	29	1.49
Projection Fibers				
Anterior corona radiata L	-13	26	-10	1.46
	-24	25	10	1.32
	-21	38	-1	1.33
	-12	31	-13	1.35
Anterior corona radiata R	18	28	25	1.35
Anterior limb of internal capsule L	-18	17	1	1.57
	-15	12	2	1.39

Anterior limb of internal capsule R	22	-1	14	1.42
Cerebral peduncle L	-13	-24	-15	1.57
	-8	-11	-7	1.45
Cerebral peduncle R	8	-22	-29	3.7
Corticospinal tract L	-9	-27	-24	2.8
	-6	-18	-22	2.17
	-5	-21	-22	1.47
	-8	-26	-36	1.36
	-4	-22	-29	2.07
Corticospinal tract R	5	-22	-29	1.9
External capsule R	29	14	4	1.37
Inferior cerebellar peduncle L	-9	-43	-40	2.34
	-4	-44	-54	2.47
	-11	-45	-30	1.46
	-9	-42	-36	1.75
Inferior cerebellar peduncle R	4	-45	-55	2.7
	13	-43	-39	1.37
	12	-45	-34	1.37
Medial lemniscus L	-4	-37	-37	1.57
	-5	-37	-32	1.47
Medial lemniscus R	4	-38	-37	1.87
Middle cerebellar peduncle	-15	-28	-32	2.74
	-15	-64	-32	2.12
	-3	-17	-29	1.85
	9	-17	-27	1.96
	26	-46	-38	2.22
	17	-49	-40	1.72
	-18	-46	-40	1.56
	22	-55	-40	2.32
	31	-51	-38	1.61
	-16	-40	-32	1.47
	26	-59	-36	1.43
	-12	-29	-27	1.62

	-26	-55	-38	1.42
	23	-49	-39	1.42
	10	-31	-41	1.86
	28	-56	-37	1.33
	19	-45	-39	1.33
	-23	-48	-36	1.3
	15	-25	-34	1.42
	20	-61	-33	1.48
	-12	-22	-33	1.55
	-13	-39	-35	1.5
	23	-37	-28	1.56
	-13	-21	-28	1.37
Pontine crossing tract (a part of MCP)	-3	-27	-26	1.79
	-4	-31	-31	1.46
	-6	-30	-35	1.37
	4	-28	-26	1.54
Posterior limb of internal capsule L	-13	-5	-2	2.52
	-23	-14	18	1.53
Posterior limb of internal capsule R	22	-6	13	1.39
	21	-3	11	1.32
Posterior thalamic radiation (include optic radiation) L	-31	-65	11	1.59
	-32	-41	7	1.81
Posterior thalamic radiation (include optic radiation) R	29	-60	17	1.87
	37	-45	2	1.56
	33	-44	11	1.38
	40	-41	2	1.48
Retrolenticular part of internal capsule R	29	-21	-2	1.6
Superior cerebellar peduncle L	-7	-32	-13	1.94
	-5	-36	-19	2.7
	-7	-50	-28	1.36
	-8	-52	-30	1.35
	-6	-32	-22	1.4
	-6	-45	-26	1.51

	-7	-35	-24	1.34
	-6	-41	-23	1.37
	-5	-39	-22	1.38
Superior cerebellar peduncle R	5	-36	-19	1.64
	6	-39	-21	1.3
Superior corona radiata R	19	-4	40	1.38
	21	-1	26	1.41
	22	9	34	2.66
	21	4	39	1.63
	22	-1	38	1.43
Negative Group Differences				
Association Fibers				
Cingulum (cingulate gyrus) R	9	14	28	1.53
	10	22	24	1.32
	10	24	24	1.32
Cingulum (hippocampus) L	-27	-38	-9	1.87
Cingulum (hippocampus) R	26	-35	-10	2.24
	25	-29	-16	2.42
Sagittal stratum (include inferior longitidinal fasciculus and inferior fronto-occipital fasciculus) R	41	-37	-10	1.43
Commissural Fibers				
Splenium of corpus callosum	16	-39	8	2.04
	-23	-54	10	1.52
	-8	-39	12	2.4
Projection Fibers				
Anterior corona radiata R	26	19	15	1.38
	26	19	11	1.51
Anterior limb of internal capsule R	23	16	12	1.74
Cerebral peduncle L	-5	-17	-18	1.62
	-11	-17	-18	1.3

Cerebral peduncle R	10	-10	-13	1.59
Corticospinal tract L	-7	-20	-31	1.61
Corticospinal tract R	4	-27	-38	1.3
External capsule R	36	-7	-3	1.67
Middle cerebellar peduncle	29	-56	-41	1.72
	27	-60	-41	1.47
	12	-39	-34	1.37
	26	-51	-39	1.37
	-9	-32	-42	1.41
	14	-33	-28	1.35
Pontine crossing tract (a part of MCP)	2	-23	-24	2.19
	1	-21	-26	1.33
Posterior corona radiata L	-21	-25	19	2.01
Posterior thalamic radiation (include optic radiation) R	36	-55	6	1.55
Retrolenticular part of internal capsule L	-28	-36	17	1.65
	-30	-38	14	1.55
	-27	-30	18	1.68
Superior corona radiata L	-24	-16	47	1.94
	-27	-20	21	2.18
Superior corona radiata R	26	-23	21	1.59
	25	-10	21	1.4

Table A.11. Peak stereotactic coordinates (MNI) for the whole-brain correlation analysis showing associations between transcellular epithelial permeability of *Salmonella typhimurium* and whole-brain fractional anisotropy in the healthy women**.**

Tract	X	Y	Z	-log10(p)
Positive Correlations				
Association Fibers				
Sagittal stratum (include inferior longitidinal fasciculus and inferior fronto-occipital fasciculus) L	-44	-32	-11	1.54
	-43	-21	-11	1.37
Superior fronto-occipital fasciculus (could be a part of anterior internal capsule) R	22	3	20	1.31
Superior longitudinal fasciculus L	-34	2	30	2.49
	-37	5	22	1.39
Superior longitudinal fasciculus R	40	-53	16	2.7
	42	-42	10	2.8
	44	-43	3	2.7
	40	-6	28	1.6
Commissural Fibers				
Body of corpus callosum	-10	-5	29	3.22
	-3	3	24	1.89
	11	-7	29	2.25
	13	-24	30	3
	-8	-20	26	2.3
	-11	-25	28	2.21
	8	-10	27	1.74
	-6	-1	27	1.68
	6	-21	25	1.82
	-10	-14	29	1.78
	10	-22	27	2
	-10	-20	28	1.37
Splenium of corpus callosum	18	-44	27	1.75
	-18	-47	18	1.69
	-11	-35	22	1.89

	-17	-49	18	1.48
Projection Fibers				
Anterior corona radiata L	-24	30	1	2.24
	-24	26	10	1.47
	-23	37	-4	1.68
Anterior corona radiata R	27	16	28	1.37
Cerebral peduncle L	-6	-12	-12	1.99
	-19	-20	-6	1.32
	-18	-21	-8	1.39
Cerebral peduncle R	11	-16	-18	1.64
Corticospinal tract L	-10	-19	-22	2.47
Inferior cerebellar peduncle L	-9	-43	-39	2.21
	-11	-46	-30	1.35
Middle cerebellar peduncle	-23	-45	-36	2.12
	-16	-28	-32	1.61
	19	-36	-36	1.36
Posterior thalamic radiation (include optic radiation) R	28	-57	17	2.22
	35	-57	11	1.67
Superior cerebellar peduncle R	5	-32	-17	1.32
Superior corona radiata L	-28	-17	21	1.81
Negative Correlations				
Association Fibers				
Cingulum (hippocampus) R	25	-29	-16	1.68
Superior longitudinal fasciculus L	-42	-51	7	1.46
Commissural Fibers				
Splenium of corpus callosum	-19	-46	12	1.65
	-14	-46	16	1.38
Projection Fibers				

Anterior limb of internal capsule R	22	-2	13	1.65
Cerebral peduncle R	14	-25	-15	1.66
	7	-17	-21	1.57
	10	-29	-18	1.85
Corticospinal tract L	-6	-27	-30	1.75
Corticospinal tract R	10	-30	-22	1.8
External capsule L	-27	14	-9	1.3
External capsule R	29	14	4	1.74
Middle cerebellar peduncle	12	-19	-26	1.81
	14	-27	-26	1.63
Posterior limb of internal capsule L	-18	-11	-2	1.58
	-19	-10	2	1.4
	-16	-7	4	1.3
Posterior limb of internal capsule R	23	-9	10	1.48
Posterior thalamic radiation (include optic radiation) L	-31	-69	7	2.28
Superior cerebellar peduncle L	-3	-26	-17	2.55
	-5	-37	-19	1.99
Superior corona radiata R	27	5	30	1.91

Table A.12. Peak stereotactic coordinates (MNI) for the whole-brain correlation analysis showing associations between transcellular epithelial permeability of *Salmonella typhimurium* and whole-brain fractional anisotropy in the IBS patients.

Tract	X	Y	Z	-log10(p)
Positive Correlations				
Association Fibers				
Superior longitudinal fasciculus L	-42	-53	6	1.88
Commissural Fibers				
Body of corpus callosum	-14	-17	32	2.1
	4	-16	25	1.38
	-9	-19	28	1.32
Genu of corpus callosum	-6	29	0	1.45
Splenium of corpus callosum	23	-48	17	1.39
Projection Fibers				
Cerebral peduncle L	-16	-20	-11	2.02
External capsule R	29	15	-7	1.73
Inferior cerebellar peduncle R	4	-44	-54	1.84
Middle cerebellar peduncle	-23	-43	-36	3.4
	22	-38	-35	2.03
	-20	-62	-33	1.74
	27	-46	-38	1.43
	-15	-43	-34	1.3
	28	-55	-37	1.45
Posterior thalamic radiation (include optic radiation) L	-30	-66	13	1.41
Posterior thalamic radiation (include optic radiation) R	30	-60	15	2.02
Superior cerebellar peduncle R	5	-32	-18	1.52
Negative Correlations				

Association Fibers				
Cingulum (hippocampus) R	24	-33	-11	1.4
	22	-28	-16	1.91
Projection Fibers				
Anterior corona radiata L	-24	26	10	1.4
Anterior limb of internal capsule R	23	20	9	2.8
Cerebral peduncle L	-12	-17	-15	2.22
	-8	-27	-21	1.65
Cerebral peduncle R	18	-12	-7	1.68
	5	-26	-33	1.84
Middle cerebellar peduncle	15	-23	-28	1.49
Posterior limb of internal capsule R	12	-5	-8	1.84
	19	-11	2	1.67
	23	-16	4	1.38
	22	-18	-1	1.35
	20	-21	-4	1.46
	16	-6	1	1.34
Posterior thalamic radiation (include optic radiation) R	35	-57	10	1.3
Retrolenticular part of internal capsule L	-28	-36	17	2.05