

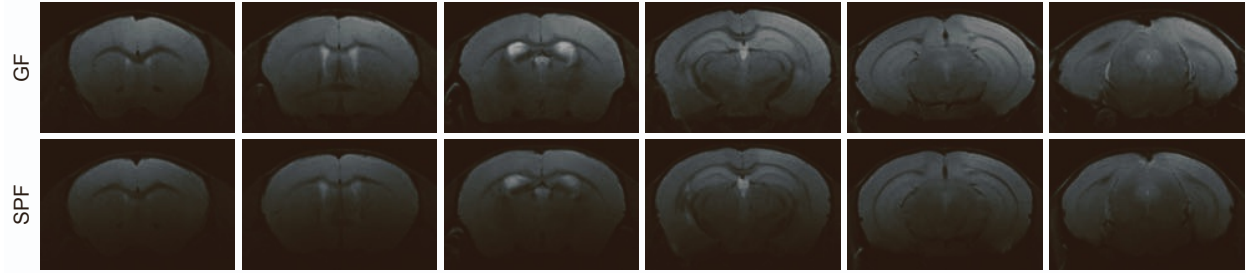
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**Supplemental information**

**The gut microbiota modulates brain  
network connectivity under physiological  
conditions and after acute brain ischemia**

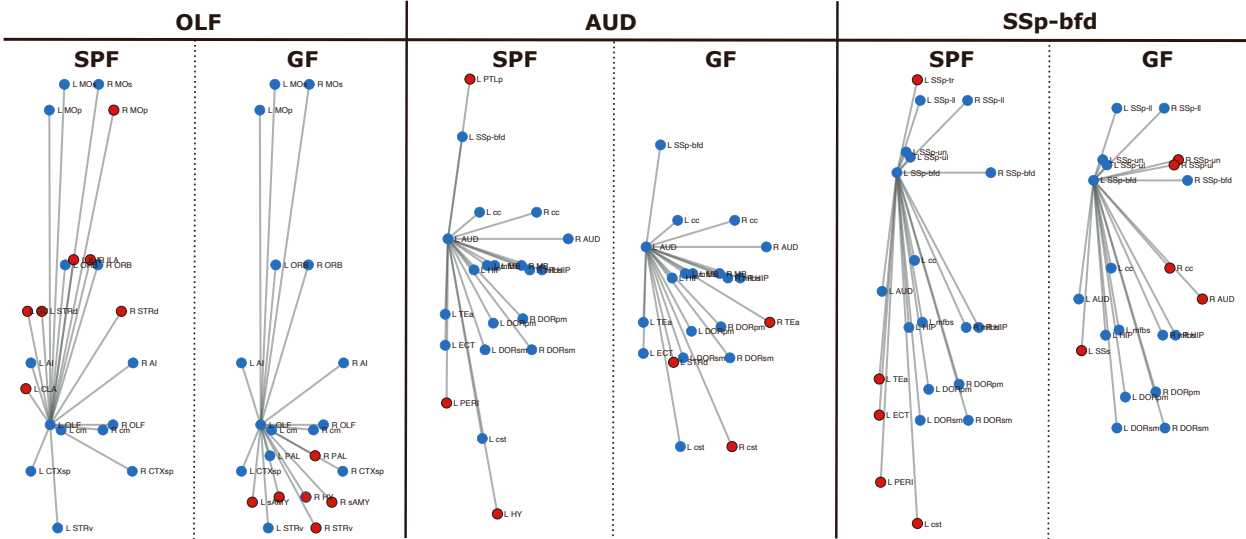
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**SUPPLEMENTAL INFORMATION**



**Figure S1: Anatomical MR imaging of representative naïve GF and SPF mice, related to STAR methods section “MRI data acquisition”.**

Multi-slice coronal T2-weighted RARE images covering the whole cerebrum of representative animals of the germ-free (GF) and SPF held group. These high-resolution images at 68 μm in-plane resolution do not allow the detection of anatomical differences induced by the lack of gut microbiota.



**Figure S2: No difference in top connections, related to Figure 1 “Germ-free mice with increased functional connectivity at the whole-brain level”.**

Graph illustration for the 20 top connections (i.e. highest edge weight) for 3 randomly chosen regions (OLF, AUD, and SSp-bfd) from the list of regions with highest degree in the GF group. Illustrations shown for left hemisphere with differences between left region in SPF vs. GF labeled in red.

**Table S1: All brain regions of the anatomical atlas used for the network analysis, related to STAR methods section “MRI postprocessing”.**

Hemisphere	ID	Hemisphere	ID	Acronym	Name
<b>Default mode network</b>					
L	31	R	2031	ACA	Anterior cingulate area
L	44	R	2044	ILA	Infralimbic area
L	714	R	2714	ORB	Orbital area
L	972	R	2972	PL	Prelimbic area
L	22	R	2022	PTLp	Posterior parietal association areas
L	254	R	2254	RSP	Retrosplenial area
L	361	R	2361	SSp-tr	Primary somatosensory area, trunk
L	337	R	2337	SSp-lI	Primary somatosensory area, lower limb
L	993	R	2993	MOs	Secondary motor area
<b>Sensorimotor network</b>					
L	985	R	2985	MOp	Primary motor area
L	993	R	2993	MOs	Secondary motor area
L	369	R	2369	SSp-ul	Primary somatosensory area, upper limb
L	337	R	2337	SSp-lI	Primary somatosensory area, lower limb
L	1098	R	3098	SSp-un	Primary somatosensory area, unassigned
L	864	R	2864	DORsm	Thalamus, sensory-motor cortex related
L	856	R	2856	DORpm	Thalamus, polymodal association cortex related
L	485	R	2485	STRd	Striatum dorsal region
L	493	R	2493	STRv	Striatum ventral region
L	803	R	2803	PAL	Pallidum
L	95	R	2095	AI	Agranular insular area
L	247	R	2247	AUD	Auditory areas
L	519	R	2519	CBN	Cerebellar nuclei
L	528	R	2528	CBX	Cerebellar cortex
L	776	R	2776	cc	Corpus callosum
L	583	R	2583	CLA	Clastrum
L	967	R	2967	cm	Cranial nerves
L	784	R	2784	cst	Corticospinal tract
L	703	R	2703	CTXsp	Cortical subplate
L	895	R	2895	ECT	Ectorhinal area
L	1000	R	3000	eps	Extrapyramidal fiber systems
L	184	R	2184	FRP	Frontal pole, cerebral cortex
L	1057	R	3057	GU	Gustatory areas
L	1080	R	3080	HIP	Hippocampal region
L	1097	R	3097	HY	Hypothalamus
L	896	R	2896	lfbst	Thalamus related
L	275	R	2275	LSX	Lateral septal complex
L	313	R	2313	MB	Midbrain

L	991	R	2991	mfbs	Medial forebrain bundle system
L	354	R	2354	MY	Medulla
L	698	R	2698	OLF	Olfactory areas
L	771	R	2771	P	Pons
L	803	R	2803	PAL	Pallidum
L	922	R	2922	PERI	Perirhinal area
L	822	R	2822	RHP	Retrohippocampal region
L	278	R	2278	sAMY	Striatum-like amygdalar nuclei
L	329	R	2329	SSp-bfd	Primary somatosensory area, barrel field
L	345	R	2345	SSp-m	Primary somatosensory area, mouth
L	353	R	2353	SSp-n	Primary somatosensory area, nose
L	378	R	2378	SSs	Supplemental somatosensory area
L	541	R	2541	TEa	Temporal association areas
L	669	R	2669	VIS	Visual areas
L	677	R	2677	VISC	Visceral area