

Supplementary Appendix

This appendix has been provided by the authors to give readers additional information about their work.

On-line Table 1. Demographic features of subjects with activated BAT and controls

	BAT (<i>n</i> = 15)	Controls (<i>n</i> = 30)	<i>P</i> Value ^a
Sex	10 women, 5 men	20 women, 10 men	1.000
Age (yr)	35.67 ± 6.66	37.43 ± 6.14	.904
BMI (kg/m ²)	20.12 ± 1.47	20.29 ± 1.43	.971
FPG (mmol/L)	4.62 ± 0.54	4.71 ± 0.36	.089
Handedness (R:L:N/A)	14:0:1	29:0:1	–
Outdoor temperature (°C)	8.87 ± 4.56	8.00 ± 5.43	.334

Note:—R indicates right; L, left; N/A, not applicable; –, indicates statistical analysis was not applicable.

^a *P* values are based on the Student *t* test.

On-line Table 2. Demographic features of BAT-positive subjects

	T1 (<i>n</i> = 15)	T2 (<i>n</i> = 15)	<i>P</i> Value ^a
Sex	10 women, 5 men	10 women, 5 men	1.000
Age (yr)	35.67 ± 6.66	35.67 ± 6.66	1.000
BMI (kg/m ²)	20.12 ± 1.47	20.08 ± 1.56	0.638
FPG (mmol/L)	4.62 ± 0.54	4.81 ± 0.44	0.308
Handedness (R:L:N/A)	14:0:1	14:0:1	–
Outdoor temperature (°C)	8.87 ± 4.56	9.07 ± 6.67	0.875

Note:—T1 indicates before heat exposure; T2, after heat exposure; R indicates right; L, left; N/A, not applicable; –, indicates statistical analysis was not applicable.

^a *P* values are based on paired *t* tests.

On-line Table 3. Brain regions with significant metabolic difference between BAT-positive and BAT-negative groups

Brain Region	Side	<i>K_E</i> ^a	Coordinates ^b			<i>Z_{max}</i>
			x	y	z	
Hypoactivity of BAT-positive group compared with BAT-negative group ^c						
Parietal lobe, inferior parietal lobule (BA 40)	Left	33	–52	–36	26	3.50
Limbic lobe, posterior cingulate (BA 23)	Right	42	8	–36	26	3.49
Frontal lobe, rectal gyrus (BA 11)	Right	41	6	34	–28	3.30
Hyperactivity of BAT-positive group compared with BAT-negative group ^c						
Parietal lobe, precuneus (BA 7)	Left	343	–4	–80	38	3.59

Note:—*K_E* indicates extend threshold.

^a Uncorrected *P* < .001 *K_E* = 80.

^b MNI standard space.

^c Survived in age- and FDR-corrected *P* < .01.

On-line Table 4. Brain regions with significant metabolic changes following BAT elimination by heat exposure (28°C)

Hypoactivity of BAT-Positive Subjects Compared with Themselves after Heat Exposure ^a /Brain Region			Coordinates ^c			Z _{max}
Side	K _E ^b	x	y	z		
Parietal lobe, inferior parietal lobule (BA 40)	Left	576	-40	-60	64	4.58
Parietal lobe, inferior parietal lobule (BA 40)	Left		-40	36	38	3.75
Parietal lobe, postcentral gyrus (BA 5)	Left		-26	-50	68	3.87
Frontal lobe, subgyral (BA 6)	Right	61	28	-4	58	4.14
Frontal lobe, inferior frontal gyrus (BA 44)	Left		-48	0	22	3.44
Frontal lobe, medial frontal gyrus (BA 6)	Left	80	0	-24	52	3.70
Frontal lobe, middle frontal gyrus (BA 9)	Left	53	-42	28	30	3.57
Anterior lobe, culmen	Right	138	30	-60	-34	3.58
Anterior lobe	Right		30	-48	-38	3.39
Sublobar, insula (BA 13)	Left	80	-40	-6	18	4.00
Sublobar, lentiform nucleus	Right	65	28	-2	-8	3.95
Limbic lobe, cingulate gyrus (BA 31)	Left		-8	-28	46	3.31

Note:—K_E indicates extend threshold.

^a Survived in FDR-corrected $P < .05$.

^b Uncorrected $P < .001$ K_E = 50.

^c MNI standard space.

On-line Table 5. Group differences in regional cerebral metabolism after heat exposure of the BAT-positive group (28°C)

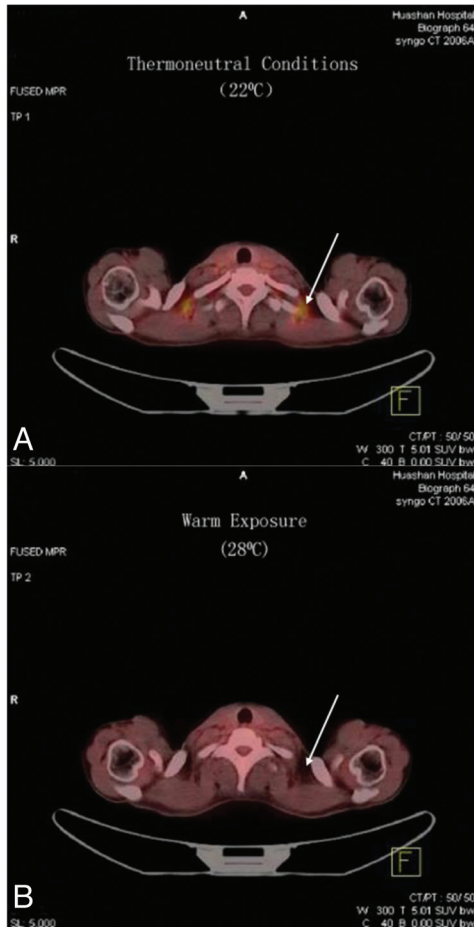
Brain Region	Side	K _E ^a	Coordinates ^b			Z _{max}
			x	y	z	
Hypoactivity of BAT-positive group after heat exposure compared with BAT-negative group ^c						
Temporal lobe, transverse temporal gyrus (BA 42)	Right	232	60	-14	8	3.94
Temporal lobe, middle temporal gyrus (BA 21)	Right		64	-4	-4	3.31
Temporal lobe, superior temporal gyrus (BA 22)	Left	148	-58	-18	-2	3.66
Limbic lobe, cingulate gyrus (BA 31)	Right	110	18	-50	22	3.64
Limbic lobe, posterior cingulate (BA 23)	Right		10	-38	24	3.40
Limbic lobe, parahippocampal gyrus (BA 19)	Right	102	26	-50	-4	3.61
Hyperactivity of BAT-positive group after heat exposure compared with BAT-negative group ^c						
Parietal lobe, inferior parietal lobule (BA 40)	Left	284	-42	-42	42	4.24
Parietal lobe, precuneus (BA 7)	Left	318	-4	-80	40	4.06
Parietal lobe, precuneus (BA 7)	Left		-18	-82	54	3.88
Parietal lobe, precuneus (BA 7)	Left		-26	-80	56	3.58
Parietal lobe, postcentral gyrus (BA 3)	Left	149	-40	-30	58	3.71
Parietal lobe, postcentral gyrus (BA 3)	Right	80	52	-20	60	3.69

Note:—K_E indicates extend threshold.

^a Uncorrected $P < .001$ K_E = 80

^b MNI standard space.

^c Survived in age- and FDR-corrected $P < .01$.



Online Fig 1. BAT activity as assessed by PET-CT with ^{18}F -FDG. The intense yellow regions in the transverse plane of the PET/CT image (A) show the areas of BAT (arrow). Comparative PET-CT scans reveal the patterns of ^{18}F -FDG uptake in the same subject under thermoneutral conditions (22°C) and after exposure to heat (28°C). There is no detectable BAT activity after heat exposure (arrow, B).