Supplementary Table 1. Correlations between major behavioral findings and protein levels in the prefrontal cortex

| | Locomotor activity (counts) | | Spontaneous alterations (%) | |
|---|---|---|---|---|
| | *r* | *p* | *r* | *p* |
| TH | −0.681 | <0.001 | 0.599 | 0.003 |
| DRD2 | −0.684 | <0.001 | 0.643 | 0.004 |
| DRD4 | −0.504 | 0.017 | 0.393 | 0.020 |
| SNAP-25 | −0.659 | 0.002 | 0.649 | <0.001 |
| BDNF | −0.121 | 0.220 | 0.315 | 0.045 |

TH, tyrosine hydroxylase; DR, dopamine receptor; SNAP-25, synaptosomal-associated protein-25; BDNF, brain-derived neurotrophic factor; *r*, correlation coefficients. Sample size = 12.

**Supplemental Figure 1**

Rearing numbers of both the stroke-prone spontaneously hypertensive rats (SHR) and the Wistar–Kyoto rats (WKY). Rearing numbers were significantly higher in SHR than in WKY. The theobromine (TB) intake suppressed this activity in SHR, but this effect did not reach statistical significance. The results are represented as the means ± SE (n = 8 or 10).

**Supplemental Figure 2**

Densitometric data of dopamine receptor D3 (DRD3) and DRD5, dopamine transporter (DAT), and vesicular monoamine transporter-2 (VMAT-2) in the prefrontal cortex (PFC). The results are represented as the means ± SE (n = 5 or 6).

**Supplemental Figure 3**

Tyrosine hydroxylase (TH) immunostaining in the striatum. (A) The TH-positive signals in the striatum were significantly lower in stroke-prone spontaneously hypertensive rats (SHR) than in Wistar–Kyoto rats (WKY). However, long-term theobromine (TB) ingestion increased TH expression in the striatum in SHR. Blue and green represent DAPI and TH, respectively. Alexa Fluor 488-labeled anti-rabbit IgG was used to detect TH immuno-positive cells, respectively. Scale bar: 100 μm. (B) Coronal section of a rat striatum. Red square highlights the area presented in (A).