Regional distributions of iron, copper and zinc and their relationships with glia in a normal aging mouse model

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Supplementary figures

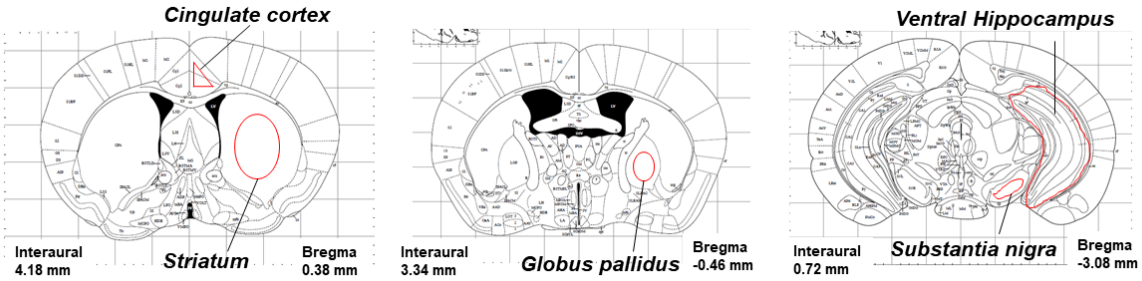


Figure 1: Representative ROIs (red lines) for the measurement of metal concentrations in synchrotron-radiation X-ray fluorescence (SRXRF)-derived elemental maps in the mouse brain. Figures are adopted from the mouse brain atlas (Paxinos, G. and Watson, C. (1986) The Rat Brain in Stereotaxic Coordinates. Academic Press, New York).

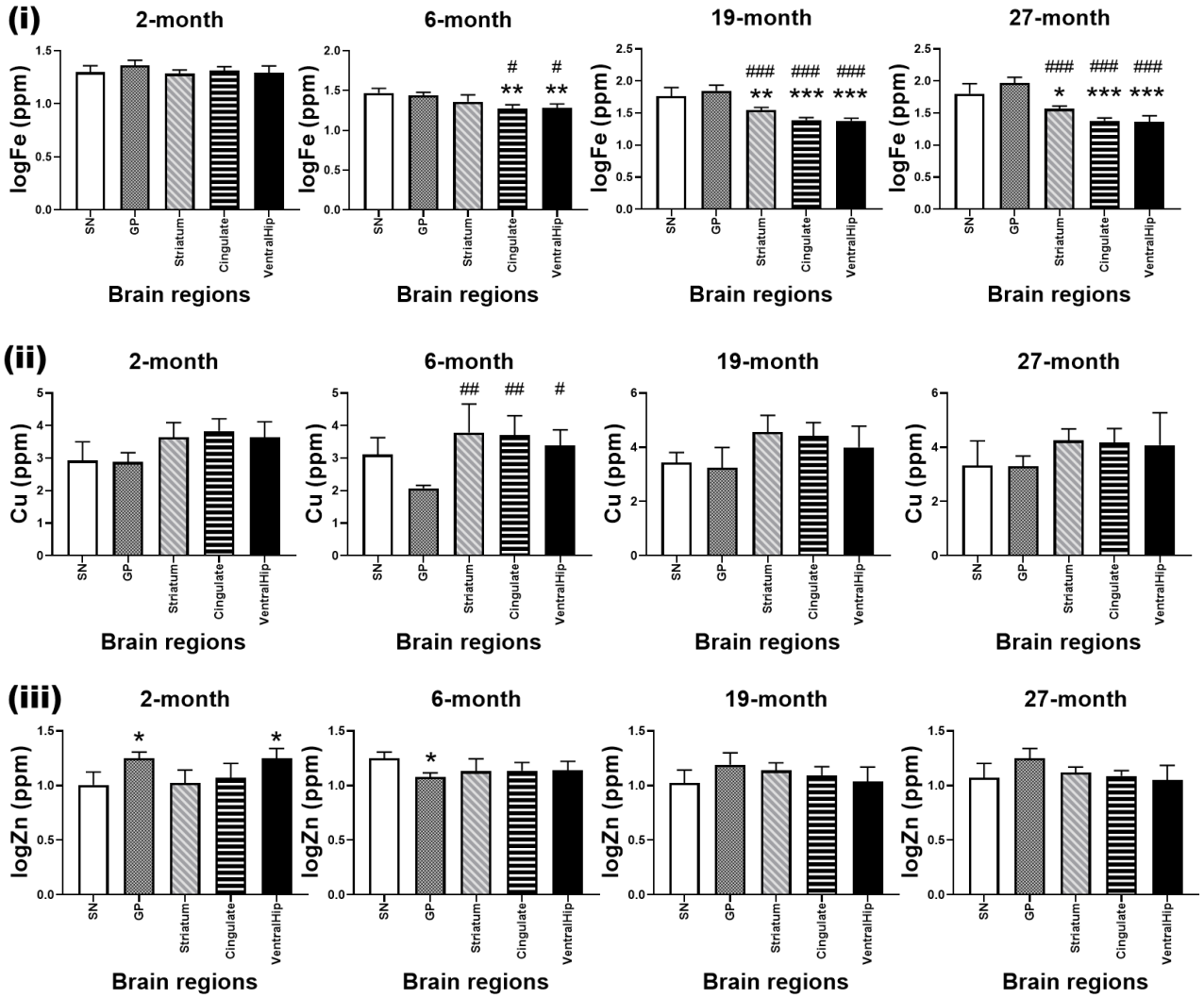


Figure 2: Synchrotron-radiation X-ray fluorescence measured levels of (i) elemental iron (Fe), (ii) copper (Cu), and (iii) zinc (Zn) in the substantia nigra (SN), globus pallidus (GP), striatum, cingulate cortex and ventral hippocampus (VentralHip) from mice aged 2-, 6-, 19- and 27-months. Significance level at *, $p<0.05$; **, $p<0.01$ and ***, $p<0.001$, compared to SN; #, $p<0.05$; ##, $p<0.01$; and ###, $p<0.001$, compared to GP. Iron and zinc were log-transformed. Values are mean ± standard deviation in parts per million (ppm).

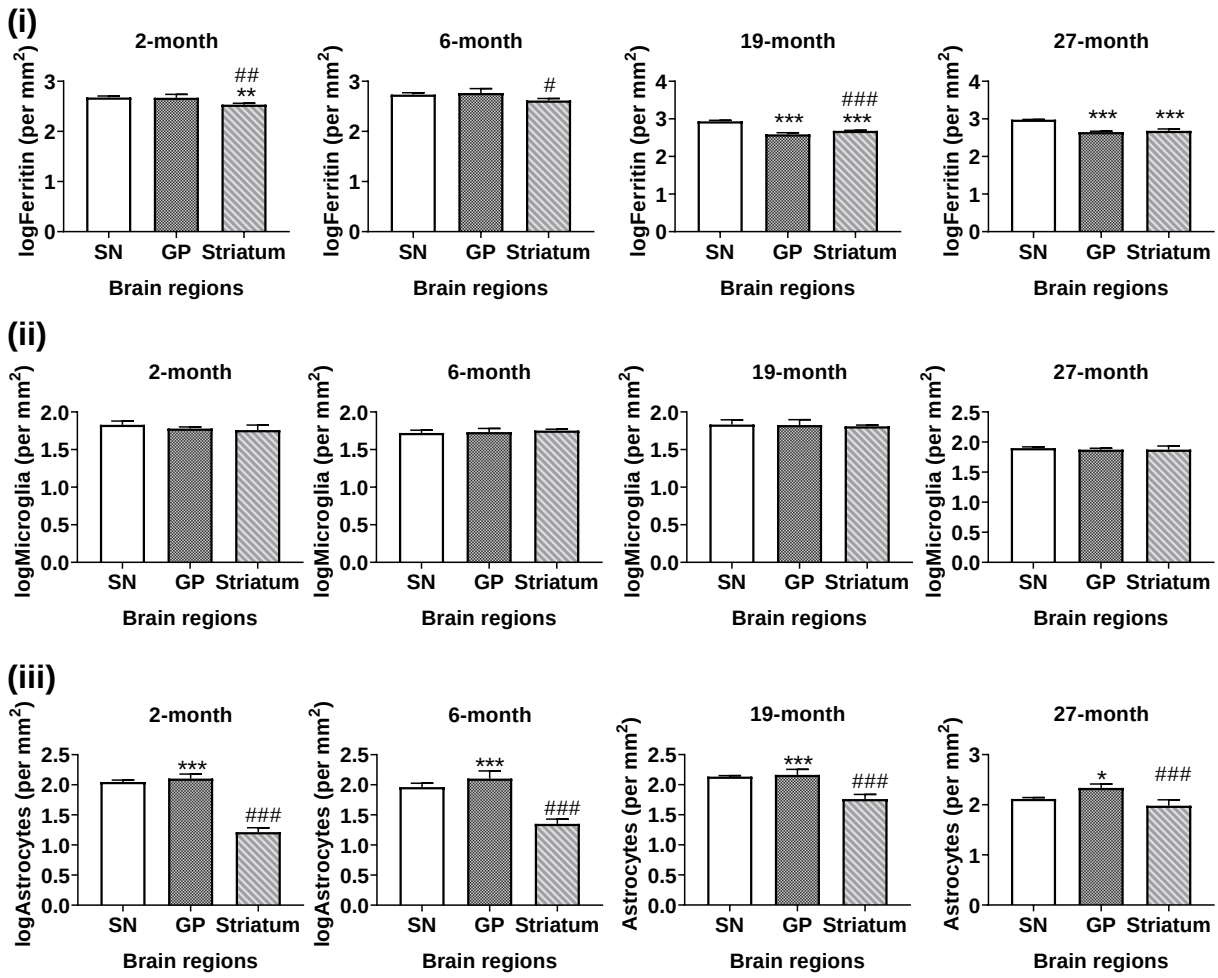
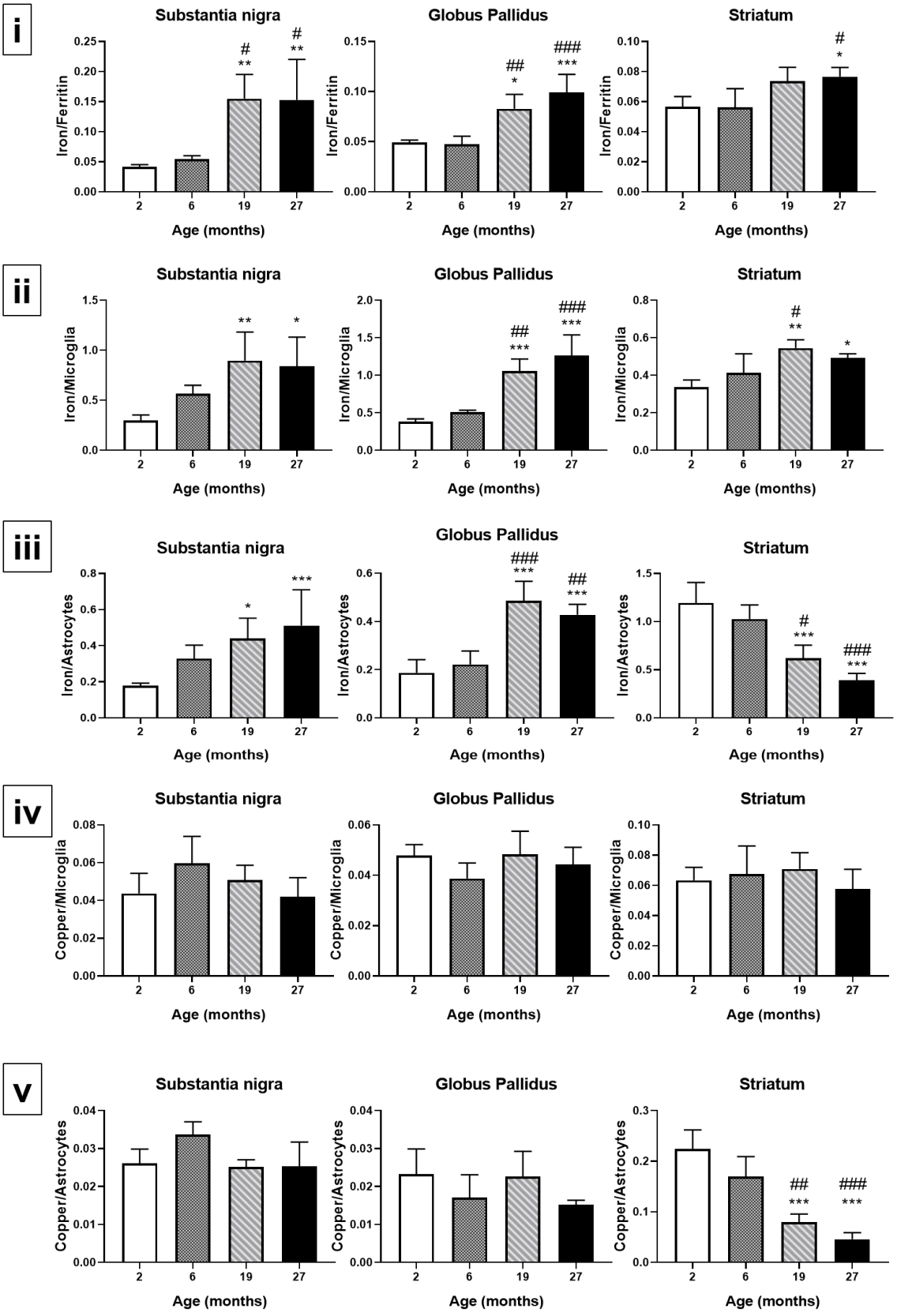


Figure 3: Alterations in (i) ferritin-, (ii) microglia- and (iii) astrocyte-immunopositive cells in the substantia nigra (SN), globus pallidus (GP) and striatum from mice aged 2-, 6-, 19- and 27-months. Significance level at *, $p<0.05$; **, $p<0.01$ and ***, $p<0.001$, compared to SN and ###, $p<0.001$, compared to GP. Ferritin, microglia and astrocytes data were log-transformed. Values are mean ± standard deviation.


i
Substantia nigra
Globus Pallidus
Striatum
Iron/Ferritin
ii
Iron/Microglia
iii
Iron/Astrocytes
iv
Copper/Microglia
v
Copper/Astrocytes
Age (months)
2
6
19
27

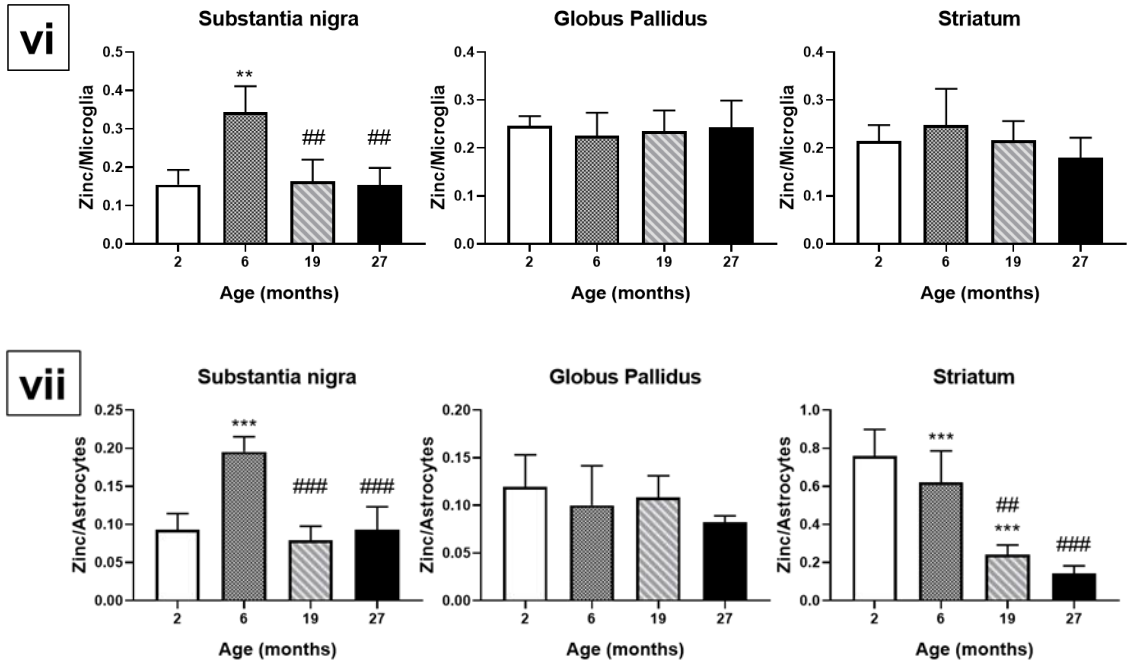


Figure 4: Ratios of (i) elemental iron (Fe):ferritin, (ii) Fe:microglia, (iii) Fe:astrocytes, (iv) copper (Cu):microglia, (v) Cu:astrocytes, (vi) zinc (Zn):microglia, and (vii) Zn:astrocytes, in different basal ganglia regions of mice aged 2-, 6-, 19- and 27-months. Significance level at *, $p<0.05$; **, $p<0.01$ and ***, $p<0.001$, compared to 2-month; #, $p<0.05$; ##, $p<0.01$; and ###, $p<0.001$, compared to 6-month. Values are mean ± standard deviation.