

# **<sup>52</sup>Mn production for PET/MRI tracking of human stem cells expressing divalent metal transporter 1 (DMT1)**

## **Supplementary Information**

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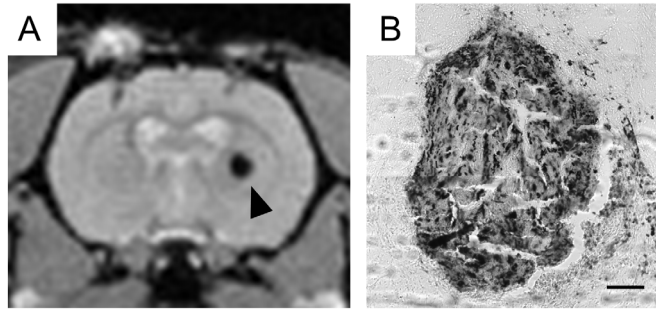
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**Figure S1:** (A) The solitary subject that showed no increase in  $R_1$  relaxation rate in the vicinity of hNPC-DMT1 showed hypointense contrast in a  $T_2$ -weighted image (black arrowhead). (B) This contrast corresponds to positive Prussian Blue staining, indicating that the signal drop-out could be due to hemorrhage-induced iron accumulation in the vicinity of the cell transplant. Scale bar = 100  $\mu\text{m}$ .

<b>Metal</b>	<b>Mass Before Separation (<math>\mu\text{g}</math>)</b>	<b>Mass After Separation (<math>\mu\text{g}</math>)</b>
<b>Zn</b>	1.51 $\pm$ 1.14	34.5 $\pm$ 0.9
<b>Cu</b>	1.83 $\pm$ 0.65	0.457 $\pm$ 0.006
<b>Ni</b>	4.54 $\pm$ 0.95	.210 $\pm$ 0.002
<b>Fe</b>	26.52 $\pm$ 2.91	6.11 $\pm$ 0.006
<b>Mn</b>	11.47 $\pm$ 0.07	0.355 $\pm$ 0.007
<b>Cr</b>	126 $\pm$ 2 mg	74.3 $\pm$ 1.0

**Table S1:** Microwave plasma atomic emission spectrometry (MP-AES) measurements were taken to investigate the presence of trace metal impurities in the 99.95% pure chromium target and separated  $^{52}\text{Mn}$  product. A target solution containing 126 mg of bulk chromium was separated using a single TOA extraction cycle. Zinc, copper, nickel, iron, manganese, and chromium concentrations were measured before and after separation. In the unseparated target material, it is clear that iron and manganese are the most significant impurities. A modest reduction in copper, nickel, and iron are observed after separation, but a significant increase in zinc is observed. We theorize that the organic phase (trioctylamine + cyclohexane) is corrosive to the plastic vials that were used for solvent-solvent extractions, leading to an increase in ionic zinc contamination. To resolve this problem, glass separatory funnels will be used in future experiments.