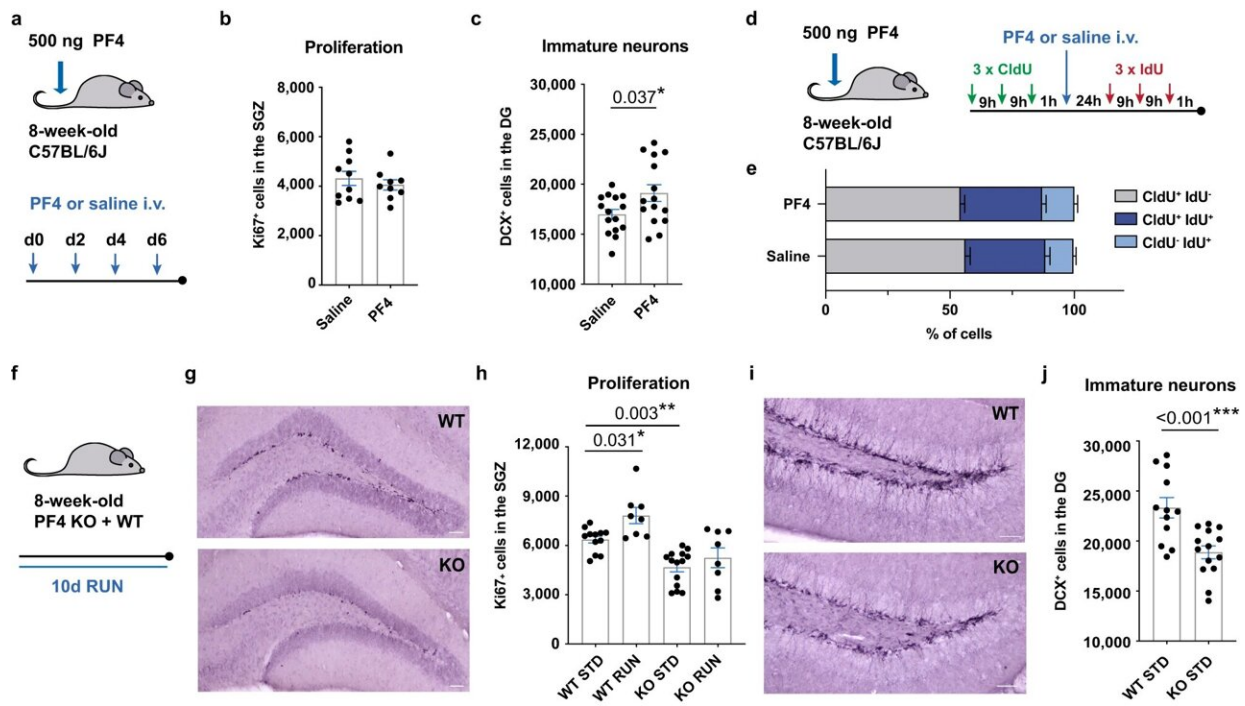


Blood factor can turn back time in the aging brain

August 16 2023



Systemic PF4 enhances adult hippocampal neurogenesis in vivo. **a** Experimental design of PF4 injection paradigm in young mice. **b, c** Intravenous (i.v.) PF4 injections for 1 week did not affect neural precursor cell proliferation in the subgranular zone (SGZ; $n = 10$ mice in saline group; $n = 9$ mice in PF4 group; counts of one hemisphere), but increased the number of doublecortin⁺ (DCX⁺) cells ($n = 15$ mice per group; counts of one hemisphere). **d** Experimental design of the double-labeling paradigm with CldU and IdU. **e** Acute administration of PF4 did not affect neural precursor cell proliferation, including the recruitment of cells from quiescence ($n = 20$ mice per group). **f** Running paradigm of PF4 knockout (KO) mice. **g** Representative images of Ki67⁺ cells in the SGZ of PF4 KO and wildtype (WT) mice. Scale bar: 50 μ m. **h** PF4 KO mice show a

significant reduction in the number of proliferating cells compared to wildtype mice. Physical exercise did not increase neural precursor proliferation in PF4 KO mice (WT STD $n = 12$; WT RUN $n = 8$; KO STD $n = 14$; KO RUN $n = 8$; counts of one hemisphere). **i** Representative images of DCX⁺ cells in the dentate gyrus (DG) of PF4 KO and wildtype mice. Scale bar: 50 μm . **j** PF4 KO mice have significantly lower levels of baseline neurogenesis compared to wildtype littermates (WT STD $n = 12$; KO STD $n = 14$; counts of one hemisphere). STD standard-housing, RUN 10-day running. Bars are mean \pm SEM. Statistical analysis was performed using unpaired Student's two-tailed t tests in (**c**) and (**j**), and one-way ANOVA with Sidak comparison in (**h**). * p

Citation: Blood factor can turn back time in the aging brain (2023, August 16) retrieved 30 April 2024 from <https://medicalxpress.com/news/2023-08-blood-factor-aging-brain.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.