## Supplemental Information

## Supplemental Figure Legends

**S1. Cell cycle distribution of HCN2 protein expression.**

NSCs were stained for DNA content (PI) and HCN2 protein expression and analyzed by flow cytometry.

**S2. In vivo analysis of ZD7288 effects on cell proliferation in the postnatal brain.**

(A-D) ZD7288 (8 mg/kg body weight) was administered intraperitoneally (i.p.) into 21-day old mice. (A, B) Stereological cell counting in sagittal sections of Ki67+ cells in (A) SVZ and (B) SGZ. (C, D) 22 hours after injection of ZD7288 animals were given a 2-hour BrdU pulse prior to sacrifice. Proliferation was assayed in sagittal sections by immunostaining with antibodies against BrdU. Stereological cell counting was done in (C) SVZ for (D) SGZ. Statistics were calculated using students t-test, (\*<0.05, \*\*<0.01, \*\*\*<0.001).

**S3. Analysis of cell protection by ZD7288.**

Analysis of genotoxic rescue by quantification of cell viability (ATP-based cell assay) following treatment with Ara-C in the presence or absence of Cs+. Statistics were calculated using students t-test, (\*\*<0.01).

**S4. Differentiation analysis.**

(A) Transcriptome analysis by RNA sequencing of NSCs after 24 hours of ZD7288 exposure. Histogram indicating either very low or no changes in markers for differentiation or stemness.

## Key Resource Table

RNA sequencing data from NSCs (100 000 cells per sample) after 24 h exposure to ZD7288 versus control with calculated statistics.