SUPPLEMENTARY FIGURE LEGENDS

Supplementary Figure 1. Characterization of H9-hESCs and their derived NSCs and neurons.

(A) H9-hESCs were differentiated into NSCs and neurons, and immunostained for the indicated proteins. For hESCs, the pluripotency markers Oct4 (a) and Sox2 (b) were used. DAPI (c) was used to stain the nuclei. For NSCs, nestin (d) and Sox1 (g) were used. DAPI (e and h) and merged pictures of DAPI and nestin (f) or DAPI and Sox1 (i) are shown. For neurons, the neuronal marker MAP2 was used (j). DAPI (k) and merged pictures of DAPI and MAP2 (l) are shown.

(B) Expression of telomerase in H9-hESCs, embryoid bodies (EBs), and NSCs was determined in cell lysates using the TRAP assay. hESCs were analyzed at passages 30-33 (lane 5); EBs were analyzed 3 and 7 d after formation (lanes 6 and 7); NSCs were analyzed in duplicate (lanes 8 and 9). HT1080 cells (lane 2) served as a positive control and heat inactivated HT1080 lysate (lane 4), as well as normal human fibroblasts IMR90 (lane 3) served as negative controls. Lane 1 shows DNA size markers, three of which are indicated to the left.

Supplementary Figure 2. Cell death and survival after IR exposure of ESCs, NSCs and neurons.

(A) H9-hESCs were mock-irradiated or irradiated with 10 Gy X-rays and photographed through a microscope at the indicated intervals after IR.

(B) H9-hESCs were differentiated into NSCs and neurons, which were then mock-irradiated or irradiated with 10 Gy. The cells were photographed through a microscope at the indicated intervals after IR.

Supplementary Figure 3. Interleukin expression in several cell types.

(A) Expression of IL-8 in HCA2 fibroblasts and NSCs 5 and 7d after IR was determined by immunostaining.

(B) Percentage of IL-8-positive HCA2 fibroblasts, NSCs and neurons was determined by immunostaining at the indicated intervals after IR.

(C) IL-8, (D) IL-1α, (E) IL-5 mRNA levels in HCA2 fibroblasts, NSCs, neurons and astrocytes was determined at the indicated intervals after IR by quantitative PCR.

18