Supporting Information

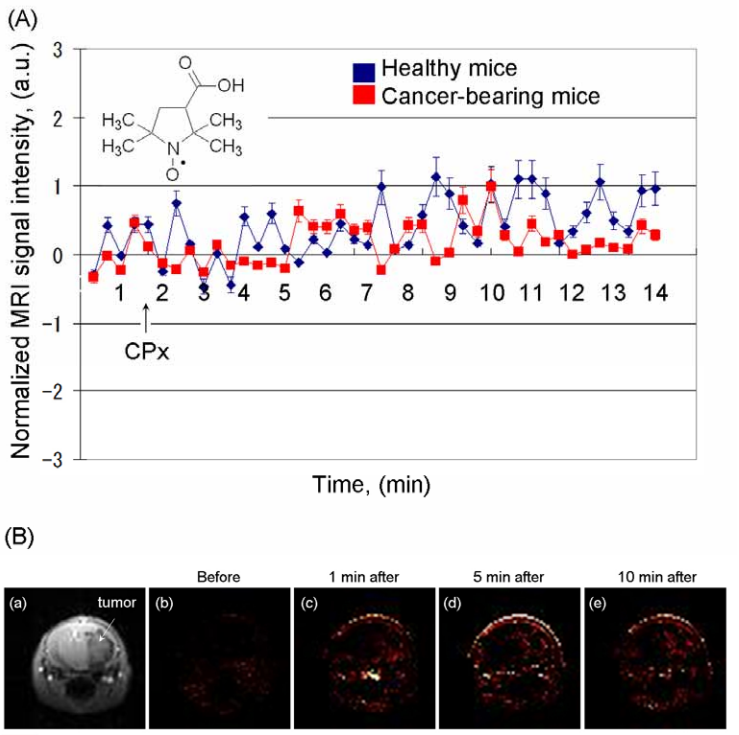

Fig. 1S. (A) Kinetics of nitroxide-enhanced MRI signal in the brain of healthy mice (blue line) and cancer-bearing mice (red line), obtained after injection of carboxy-PROXYL (CPx) (in oxidized radical form). The data are mean ± SD from 4 animals in each group. (B) MR images of cancer-bearing brain: (a) MR image of mouse brain before injection of CPx; (b-e) extracted MRI signal, obtained before and after injection of CPx.

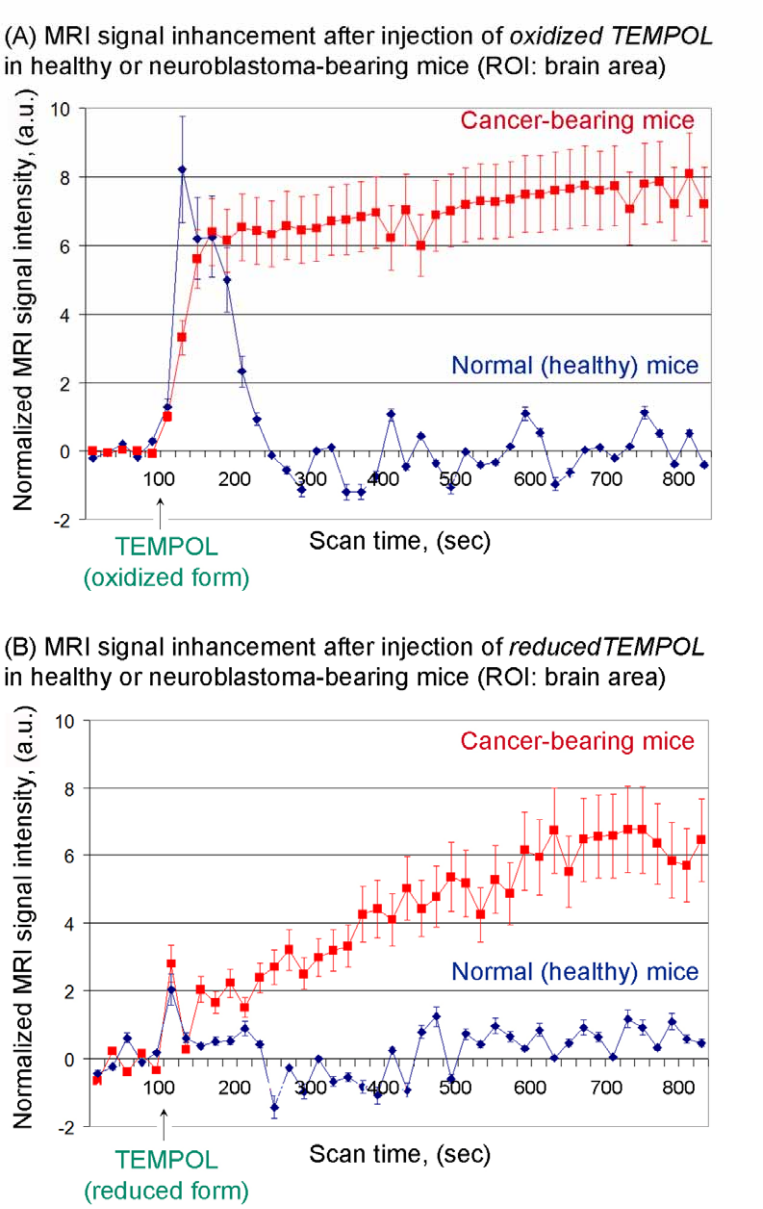

Fig. 2S. Healthy and neuroblastoma-bearing mice (moderate stage of cancer development). (A) Kinetics of nitroxide-enhanced MRI signal in the brain of healthy mice (blue line) and cancer-bearing mice (red line), obtained after injection of TEMPOL (in oxidized radical form). The data are mean ± SD from 4 control animals and 5 cancer-bearing animals. **(B)** Kinetics of nitroxide-enhanced MRI signal in the brain of healthy mice (blue line) and cancer-bearing mice (red line), obtained after injection of TEMPOL (in reduced hydroxylamine form). TEMPOL was reduced completely by ascorbate, which was proved by EPR spectroscopy. The data are mean ± SD from 4 control animals and 7 cancer-bearing animals.

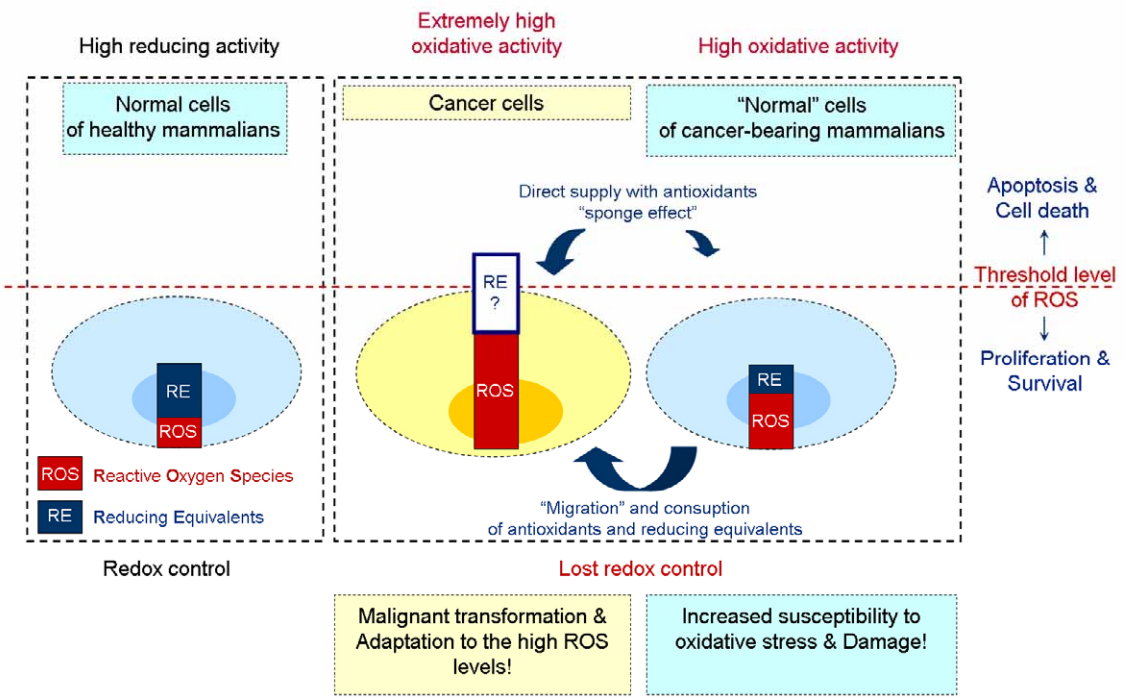

Fig. 3S. A potential mechanism, explaining the different tissue redox activity of healthy and cancer-bearing mammals.