

**Dose-dependent decrease in anti-oxidant capacity of whole blood after irradiation: A novel potential marker for biodosimetry**

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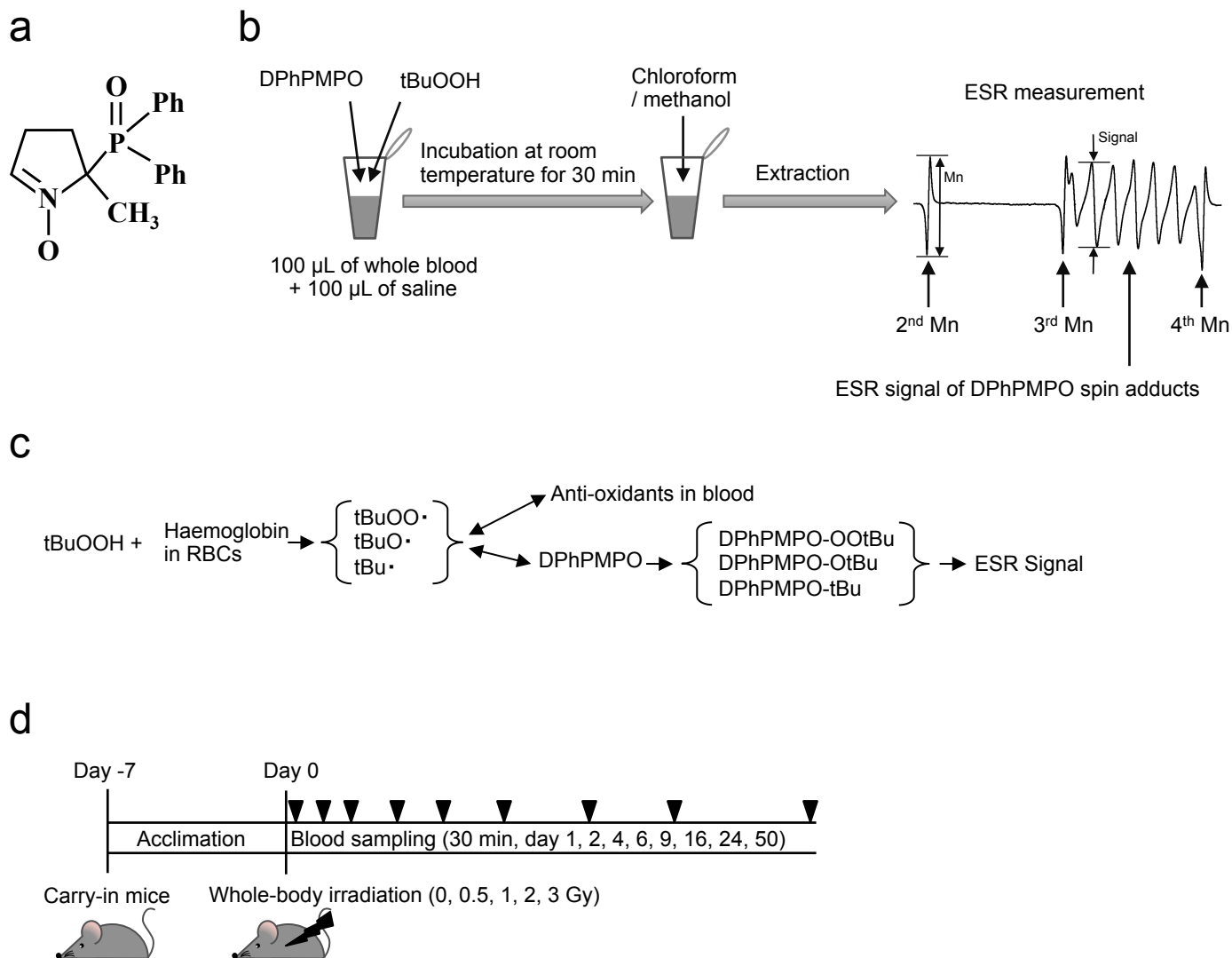
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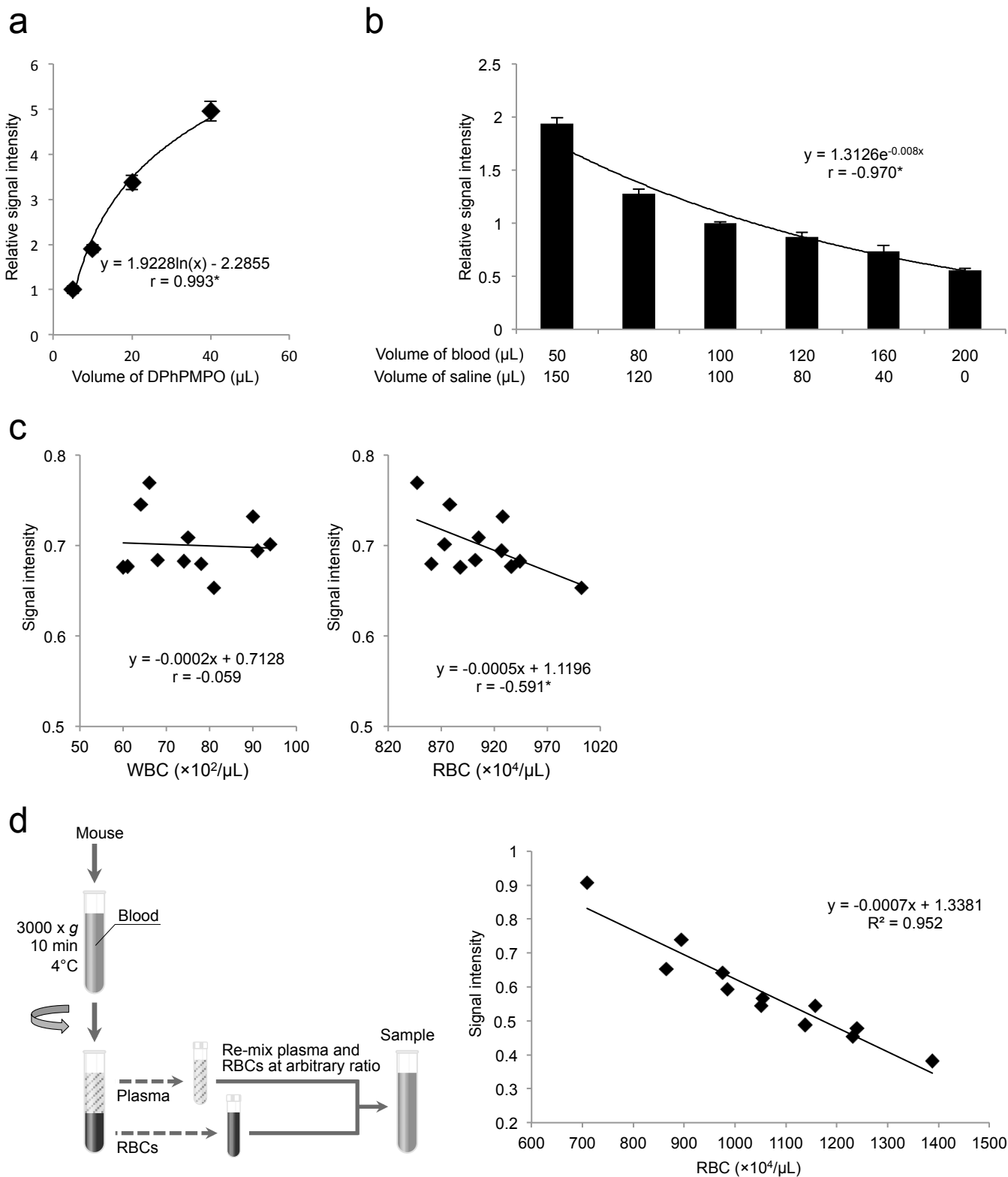
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# Figure S1



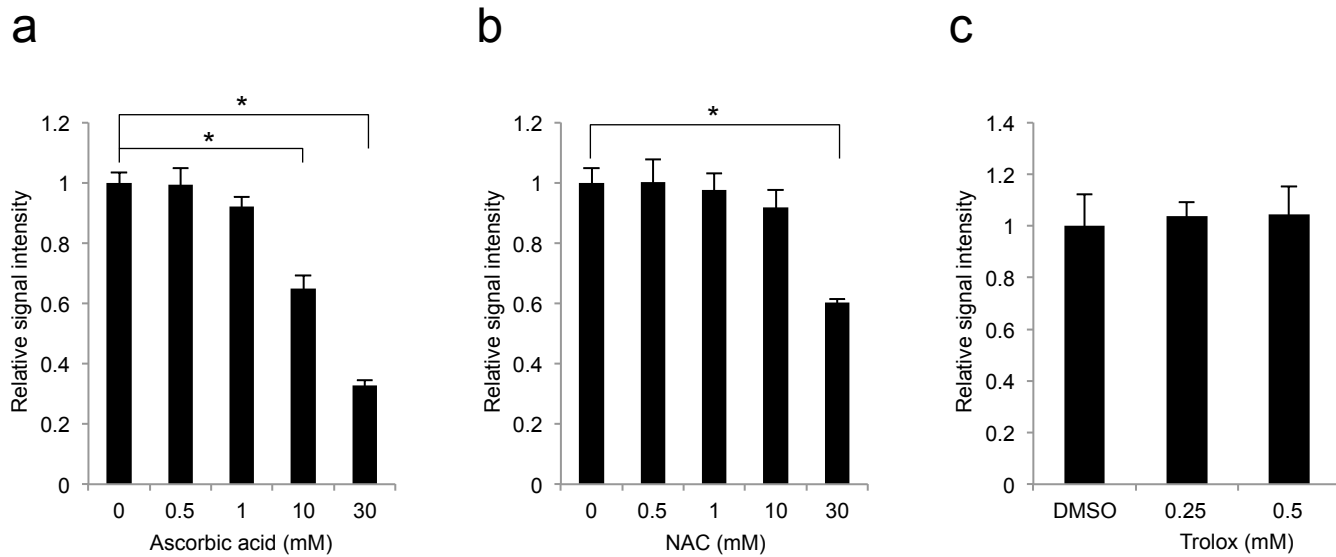
**Figure S1.** Schema of experiments. (a) Chemical structure of DPhPMPO. (b) Schema of i-Strap. (c) Radical generation and scavenging during i-Strap. (d) Protocol for mouse experiments.

# Figure S2



**Figure S2.** Characterisation of i-STrap. (a, b) Changes in signal intensity with changes in DPhPMPO dose (a) and blood/saline ratio (b). (c) Correlations between signal intensity and numbers of WBCs and RBCs in 12 healthy (non-irradiated) mice. (d) Correlation between signal intensity and number of RBCs in re-mixed blood samples. Quantitative data in (a) and (b) are means  $\pm$  SD ( $n = 3$ ). \* $P < 0.05$ , Pearson's correlation coefficient test.

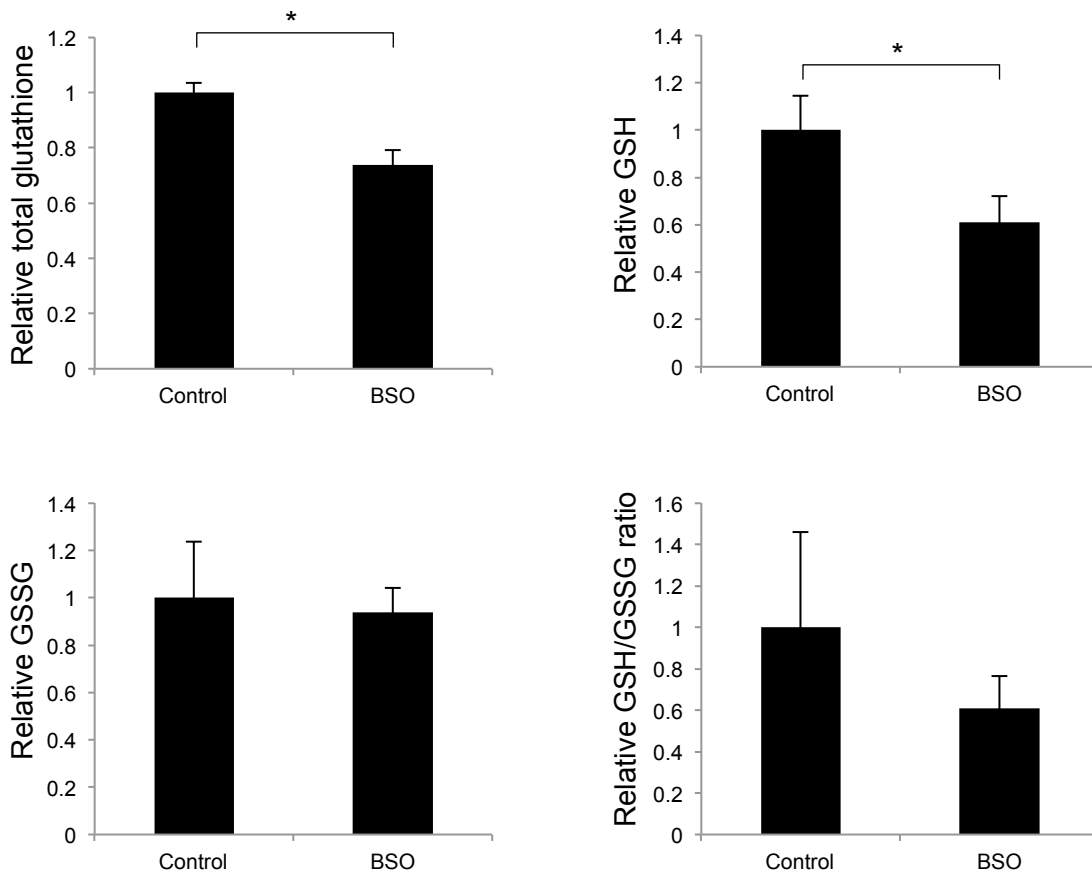
# Figure S3



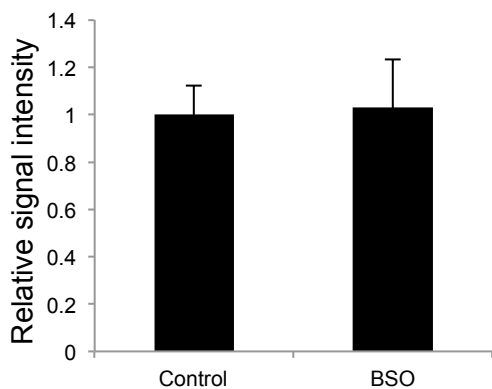
**Figure S3.** Changes in i-Strap signal intensity with changes in anti-oxidant dose. (a–c) Data for ascorbic acid (a), NAC (b), and Trolox (c). Quantitative data are means  $\pm$  SD (n = 3). \*P < 0.05, Welch's *t*-test.

# Figure S4

a

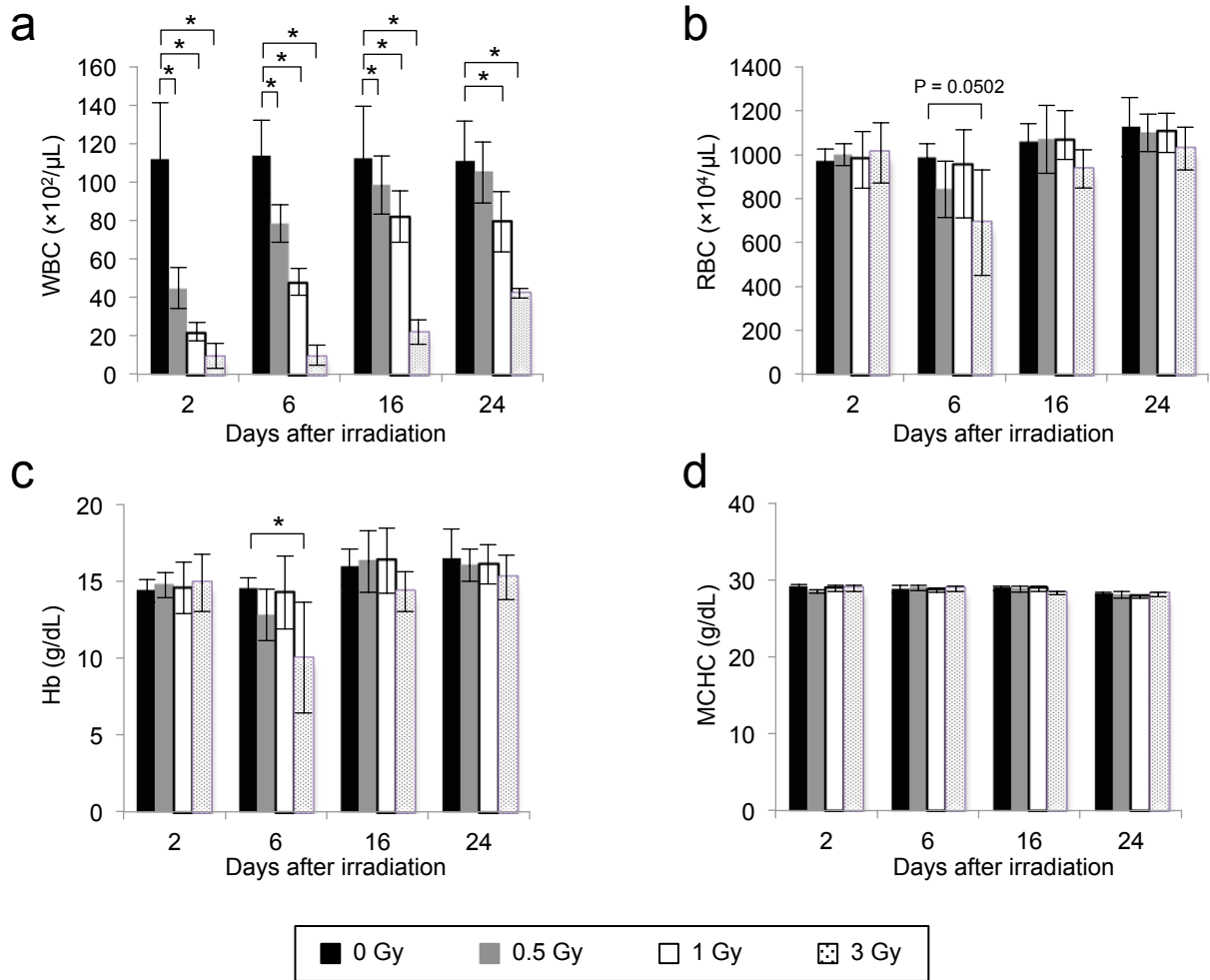


b



**Figure S4.** Changes in RBC glutathione level and whole-blood anti-oxidant capacity after BSO treatment. BSO (10 mM) was added to drinking water and administered to mice for 7 days. (a) RBC total glutathione, GSH, GSSG, and GSH/GSSG ratio after BSO treatment. (b) Whole-blood anti-oxidant capacity after BSO treatment measured using i-Strap. Quantitative data are means  $\pm$  SD (n = 6). \*P < 0.05, Welch's *t*-test.

# Figure S5



**Figure S5.** Changes in WBCs, RBCs, Hb, and MCHC after irradiation. (a–d) Changes in numbers of WBCs (a), numbers of RBCs (b), Hb (c), and MCHC (d). All quantitative data are means  $\pm$  SD ( $n = 5$ ). \* $P < 0.05$ , Welch's *t*-test.