

SUPPORTING INFORMATION

**Quantitative Profiling of Protein S-Glutathionylation Reveals Redox-Dependent Regulation of Macrophage Function During Nanoparticle-Induced Oxidative Stress**

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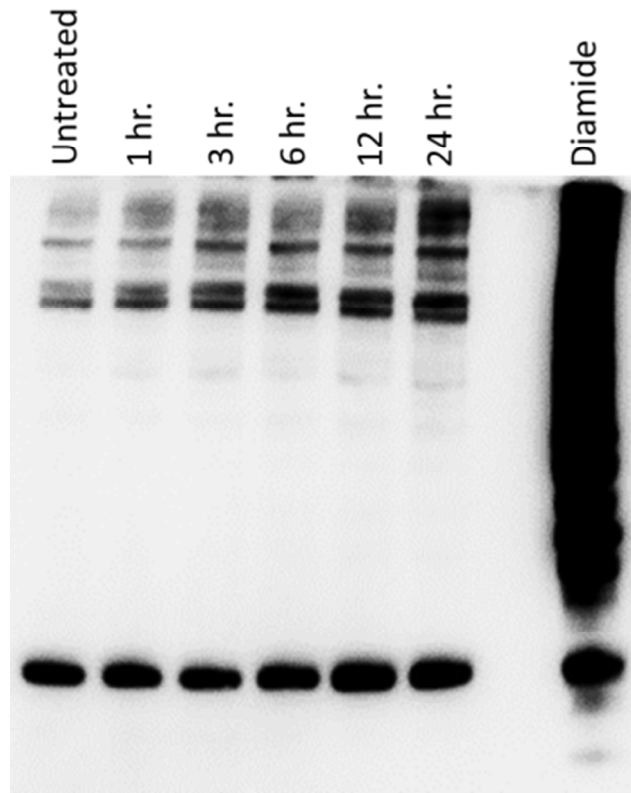
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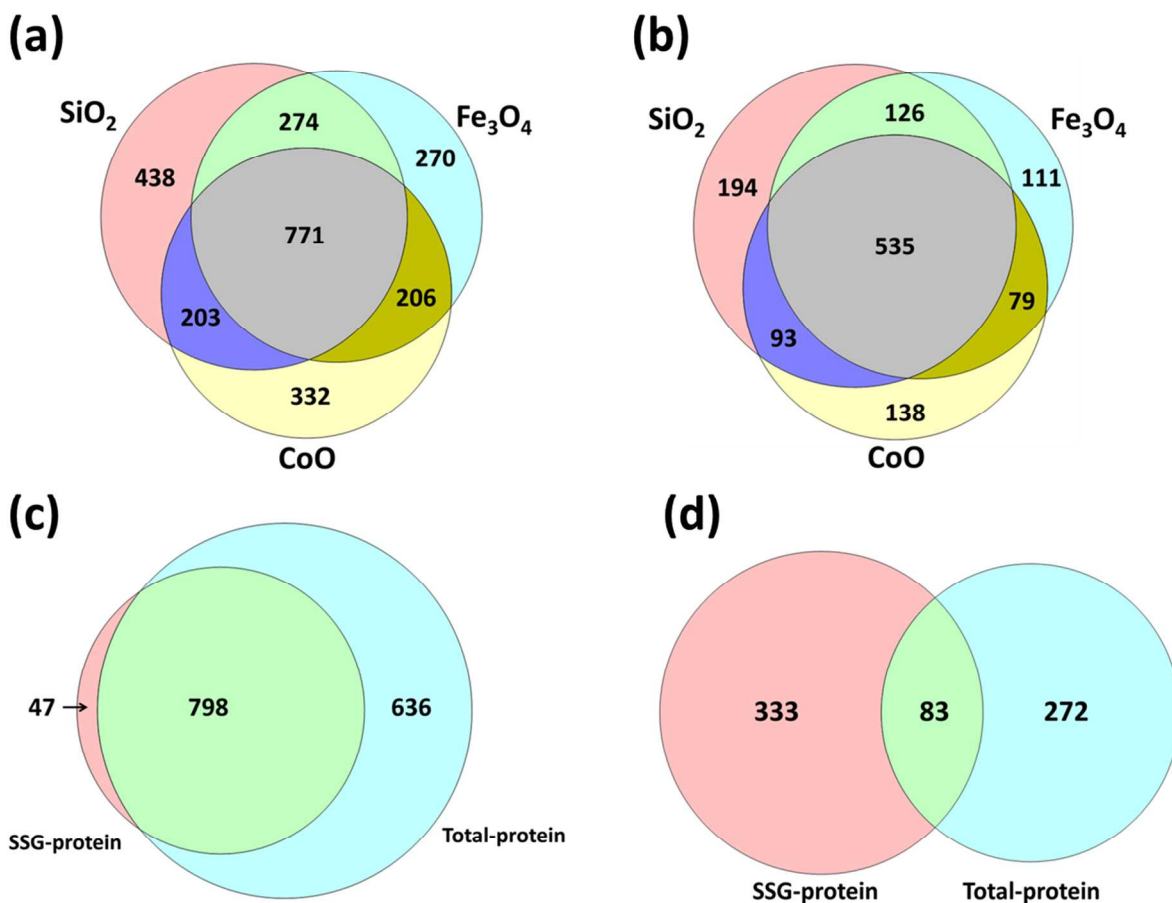
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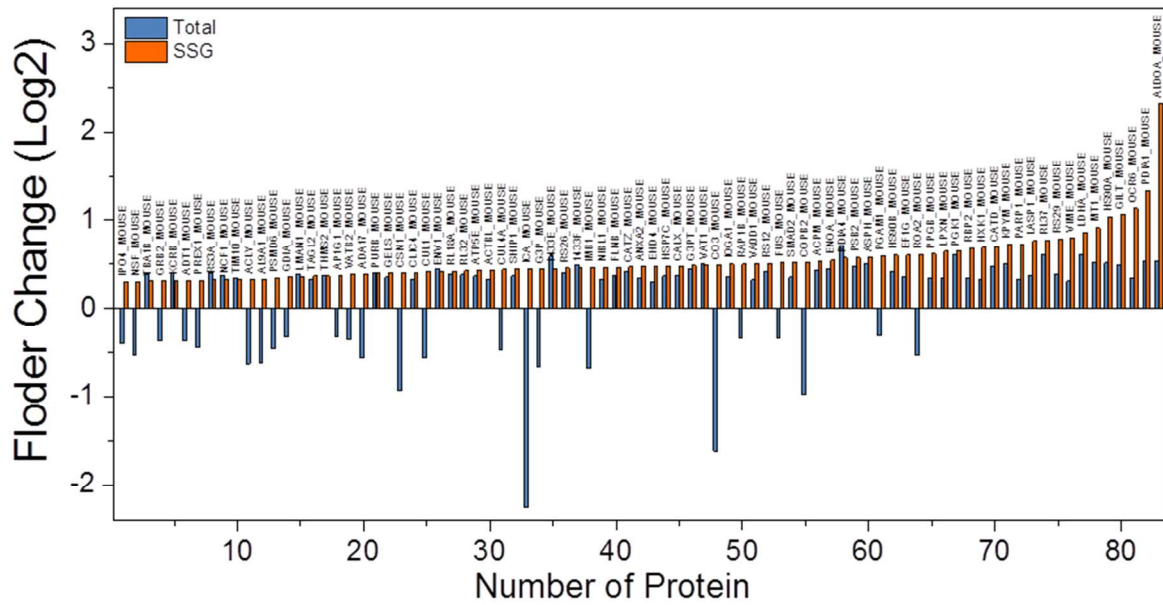
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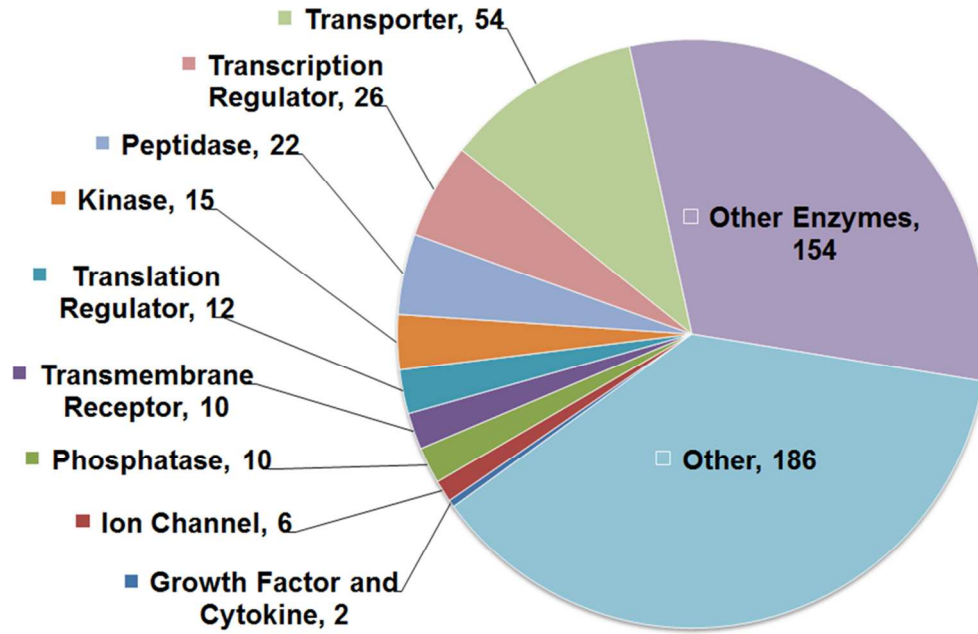
**Figure S1.** Western blot analysis of time-dependent increase of SSG in RAW 264.7 cells after treatment by CoO nanoparticles. Cells were treated by 25  $\mu\text{g}/\text{mL}$  CoO nanoparticles and cells treated by 500  $\mu\text{M}$  diamide for 30 min were used as positive control. The overall level of SSG in cells was detected on the blot using anti-glutathione monoclonal antibody (Virogen, Watertown, MA).



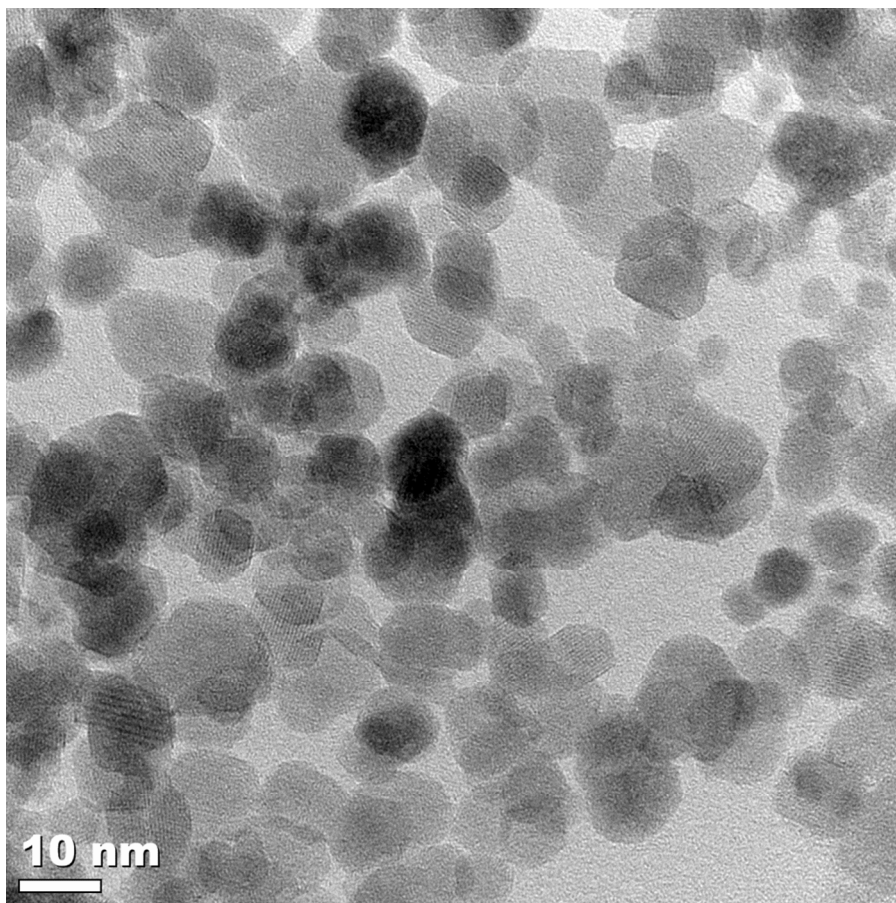
**Figure S2.** Venn diagram summarized identification of SSG-modified proteins. (a) The overlaps of identified SSG-modified sites, and (b) SSG modified proteins between different ENP-treatment conditions. (c) The overlap of identified proteins between SSG enrichment and total Cys enrichment after CoO treatment. (d) The overlap of substantial proteins between SSG enrichment and total Cys enrichment after CoO treatment. Threshold of significance: p-value  $\leq 0.05$  and  $|\log_2 \text{ratio}| \geq 0.3$  versus controls.



**Figure S3.** Summary of folder change for proteins with substantial change in SSG modification and total expression after CoO treatment. Threshold of significance:  $p\text{-value} \leq 0.05$  and  $|\log_2 \text{ratio}| \geq 0.3$  versus controls.



**Figure S4.** Distribution of molecular types of identified SSG-modified proteins with substantial SSG alteration after Fe<sub>3</sub>O<sub>4</sub> and CoO treatments. Threshold of significance: p-value  $\leq 0.05$  and log<sub>2</sub> ratio  $\geq 0.3$  versus controls.



**Figure S5.** TEM characterization for  $\text{Fe}_3\text{O}_4$  ENPs. The SEM pictures for  $\text{SiO}_2$  and  $\text{CoO}$  ENPs can be found in manufacturers' websites ( $\text{SiO}_2$ : <http://www.nanoamor.com/inc/sdetail/260>;  $\text{CoO}$ : [http://www.ssnano.com/inc/sdetail/cobalt\\_oxide\\_nanoparticles/238](http://www.ssnano.com/inc/sdetail/cobalt_oxide_nanoparticles/238)).