

Supplementary Table 1. Gossypol-induced Increase of Levels of Reduced Cysteine-containing Peptides.

Supplementary Table 2. Gossypol-induced Decrease of Levels of Reduced Cysteine-containing Peptides.

Supplementary Figure 1. Detection of ROS in untreated and gossypol-treated SKOV-3 cells using the Image-iT LIVE Reactive Oxygen Species (ROS) Kit. Cells were labeled with carboxy-H2DCFDA, which exhibited green fluorescence when reacted with ROS, and nuclei were stained with blue-fluorescent Hoechst 33342. (a) Untreated SKOV-3 cells; and (b) gossypol-treated SKOV-3 cells.

Supplementary Figure 2. The percentage of occurrence frequency of amino acids immediately before or after the Cysteine residue.

Supplementary Figure 3. The ion intensities of the glutathionylated Cys447-containing peptide C(447)IPALDSLTPANEDQKIGIEIIKR from HSP60 that is observed at $m/z=981.84$ for triply charged peptide ions. The dotted line represents the peptide from the untreated cells, and the solid line represents the peptide from gossypol-treated cells.

Supplementary Figure 4. (a) MS/MS spectrum of a doubly charged peptide ion at m/z 801.379 Da for MH_2^{2+} corresponding to the mass of the peptide from CEFQDAYVLLSEK from HSP60, in which Cysteine residue was carbamidomethylated. (b) MS/MS spectrum of a doubly charged peptide ion at m/z 953.44940 Da for MH_2^{2+} corresponding to the mass of the peptide from GQKCEFQDAYVLLSEK from HSP60, in which Cysteine residue was sulfated.