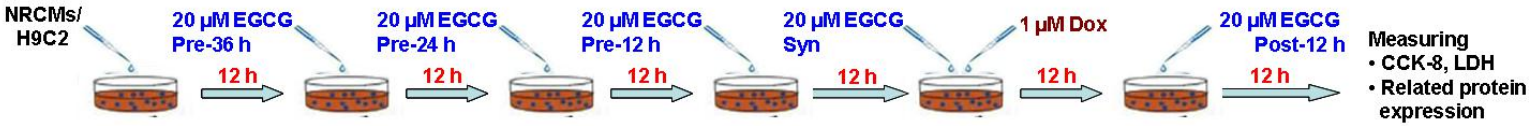

Fig. S1. The design diagram of the time-effect relationship of EGCG protection in vitro. NRCMs and H9c2 cells were randomly divided into seven groups respectively: Cells in the control group were cultured in a complete medium throughout the experiments. Cells in the Dox group were exposured to 1 μM Dox for 48 h. Cells in the Pre-36 h, Pre-24 h and Pre-12 h groups were pretreated with 20 μM EGCG for 36 h, 24 h, 12 h respectively, and then co-treated with 1 μM Dox for 48 h. Cells in the Syn group was co-treated with 20 μM EGCG and 1 μM Dox for 48 h. Cells in the Post-12 h group was treated with 1 μM Dox for 12 h, and then was co-treated with 20 μM EGCG and 1 μM Dox for 12 h.

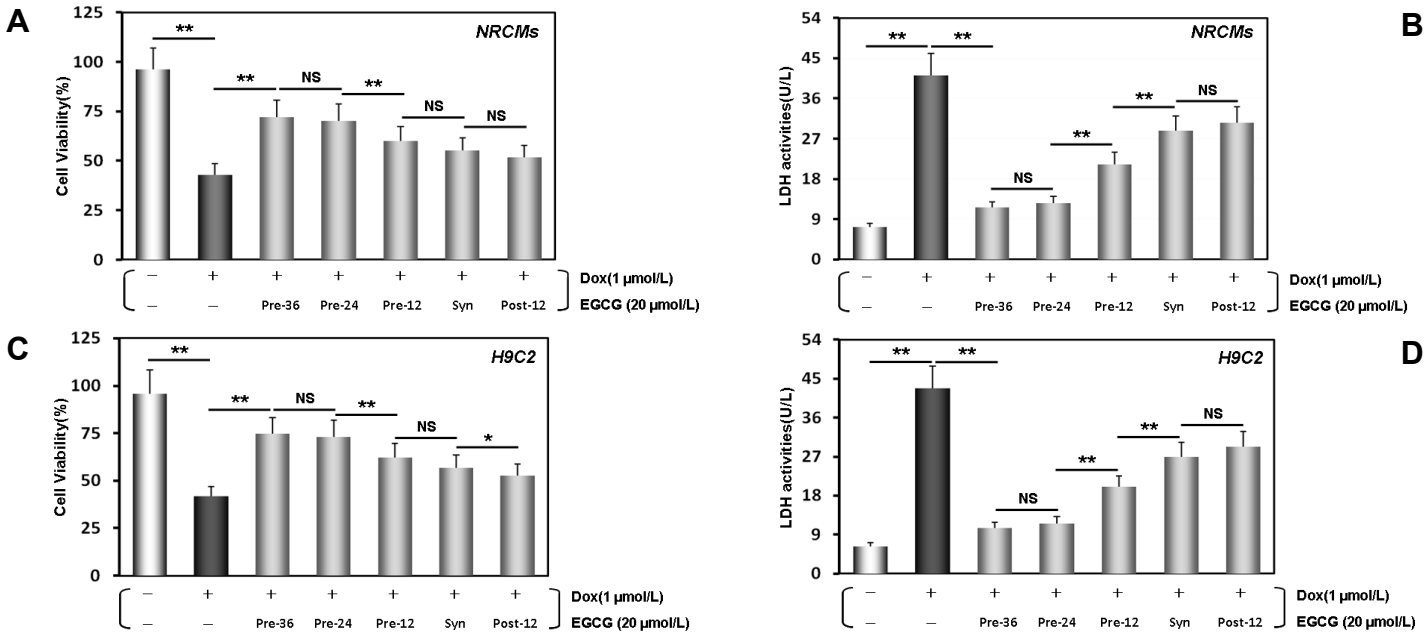

Fig. S2. The time-effect relationship of EGCG protection in NRCMs and H9c2 cells. (A) and (C) The cell viabilities of NRCMs and H9C2 cells were pretreated with 20 μM EGCG for 36 h, 24 h, 12 h respectively, and then co-treated with 1 μM Dox for 48 h 24 h, or co-treated with 20 μM EGCG and 1 μM Dox for 48 h, or treated with 1 μM Dox for 12 h, and then was co-treated with 20 μM EGCG and 1 μM Dox for 12 h (The following was done in the same method). (B) and (D) The LDH activities in culture medium of NRCMs and H9C2 cells. Values were presented as mean ± SD. For five individual experiments. NS, nonsignificant. *$P < 0.05$ compared with the indicated groups. **$P < 0.01$ compared with the indicated groups.

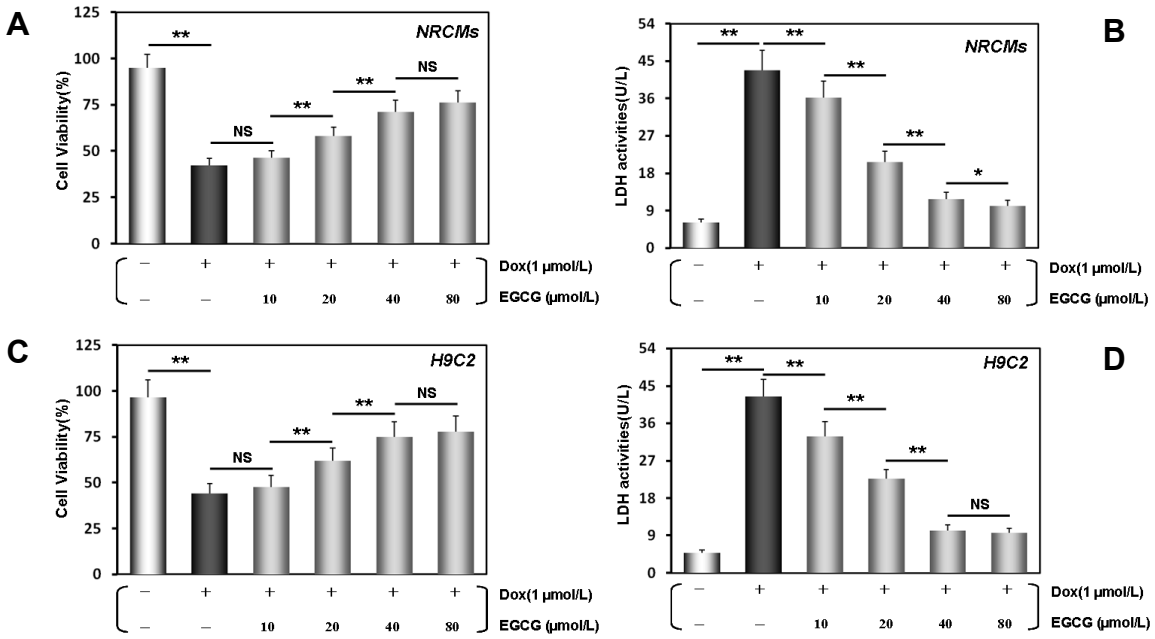

Fig. S3. The concentration-effect relationship of EGCG protection in NRCMs and H9c2 cells. (A) and (C) The cell viabilities of NRCMs and H9C2 cells were pretreated with 10, 20, 40, 80 μM EGCG for 24 h, and then co-treated with 1 μM Dox for 48 h (The following was done in the same method). (B) and (D) The LDH activities in culture medium of NRCMs and H9C2 cells. Values were presented as mean ± SD. For five individual experiments. NS, nonsignificant. *P < 0.05 compared with the indicated groups. **P < 0.01 compared with the indicated groups.

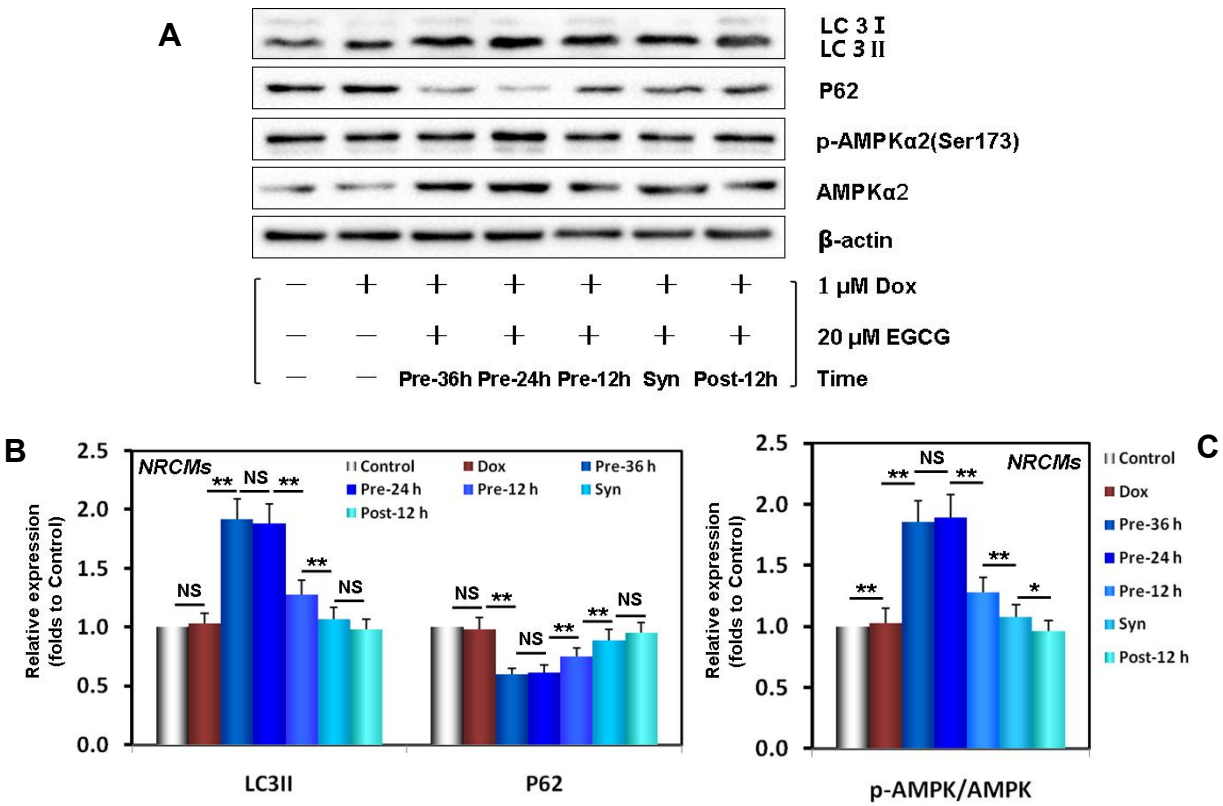

Fig. S4. The time-effect relationship of LC3 and P62 expression and p-AMPKα2/ AMPKα2 ratio in NRCMs. (A) The representative western blot bands of LC3, P62, p-AMPKα2 and AMPKα2 expression in NRCMs was pretreated with 20 μM EGCG for 36 h, 24 h, 12 h respectively, and then co-treated with 1 μM Dox for 48 h 24 h, or co-treated with 20 μM EGCG and 1 μM Dox for 48 h, or treated with 1 μM Dox for 12 h, and then was co-treated with 20 μM EGCG and 1 μM Dox for 12 h (The following was done in the same method). (B) The relative expression of LC3 and P62 in each treatment NRCMs. (C) p-AMPKα2/AMPKα2 ratio in each treatment NRCMs. Values were presented as mean ± SD. For three individual experiments. NS, nonsignificant. **P* < 0.05 compared with the indicated groups. ***P* < 0.01 compared with the indicated groups.

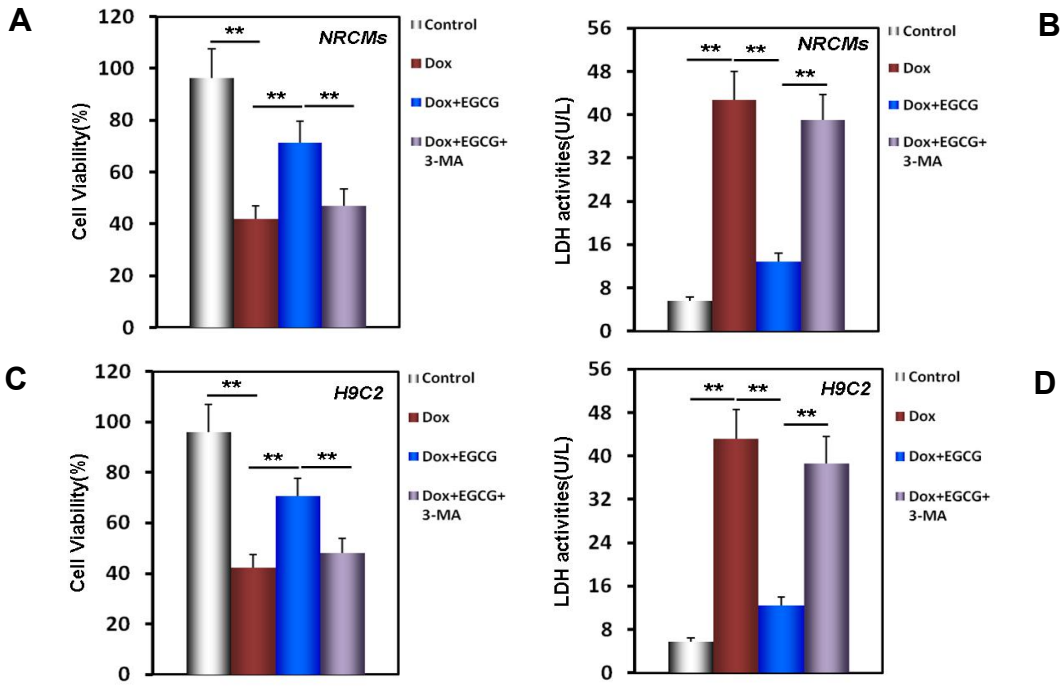

Fig. S5. The cell viability and LDH activity of EGCG pretreatment in NRCMs and H9c2 cells. (A) and (C) The cell viabilities of NRCMs and H9C2 cells were pretreated with 20 μM EGCG for 24 h, then exposured to 1 μM, and with or without 20 μM EGCG, 5 mM 3-MA co-treatment for 48 h (The following was done in the same method). (B) and (D) The LDH activities in culture medium of NRCMs and H9C2 cells. Values were presented as mean ± SD. For five individual experiments. $^{**}P < 0.01$ compared with the indicated groups.

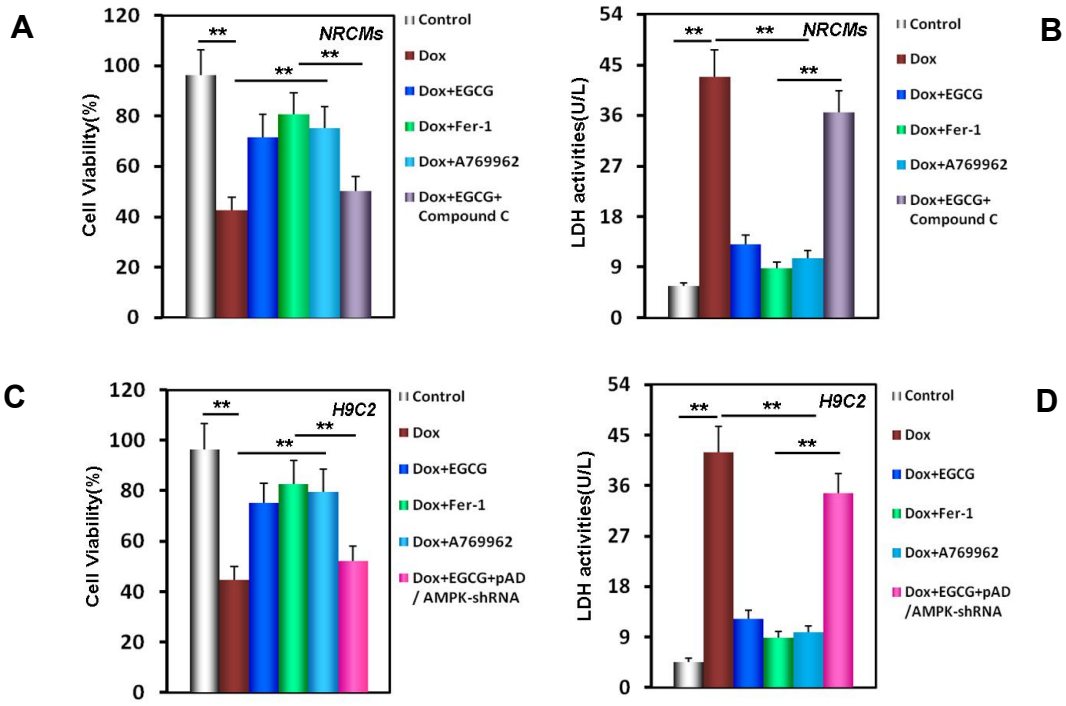

Fig. S6. The cell viability and LDH activity of EGCG pretreatment in NRCMs and H9c2 cells. (A) and (C) The cell viabilities of NRCMs and H9C2 cells were pretreated with 20 μM EGCG or 25 μM A769962 for 24 h, then exposured to 1 μM, and with or without 20 μM EGCG, 25 μM A769962, 5 μM Compound C (NRCMs) or pAD/AMPKα2- shRNA (H9c2 cells) co-treatment for 48 h (The following was done in the same method). (B) and (D) The LDH activities in culture medium of NRCMs and H9C2 cells. Values were presented as mean ± SD. For five individual experiments. $^{**}P < 0.01$ compared with the indicated groups.

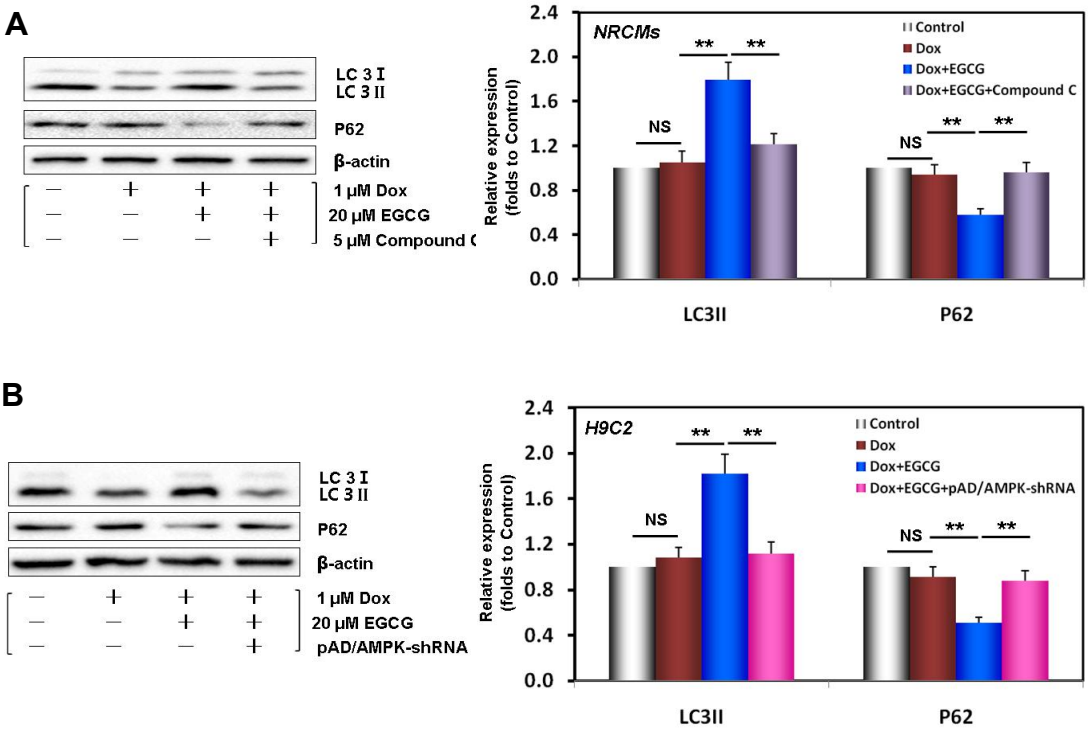

Fig. S7. The LC3 and P62 expression of EGCG pretreatment in NRCMs and H9c2 cells. (A) The representative western blot bands of LC3 and P62 expression and the relative intensities of NRCMs were pretreated with 20 μM EGCG for 24 h, then exposured to 1 μM, and with or without 20 μM EGCG, 5 μM Compound C co-treatment for 48 h. (B) The representative western blot bands of LC3 and P62 expression and the relative intensities of H9C2 cells were pretreated with 20 μM EGCG for 24 h, then exposured to 1 μM, and with or without 20 μM EGCG, pAD/ AMPKα2-shRNA co-treatment for 48 h. Values were presented as mean ± SD. For three individual experiments. NS, nonsignificant. $^{**}P < 0.01$ compared with the indicated groups.

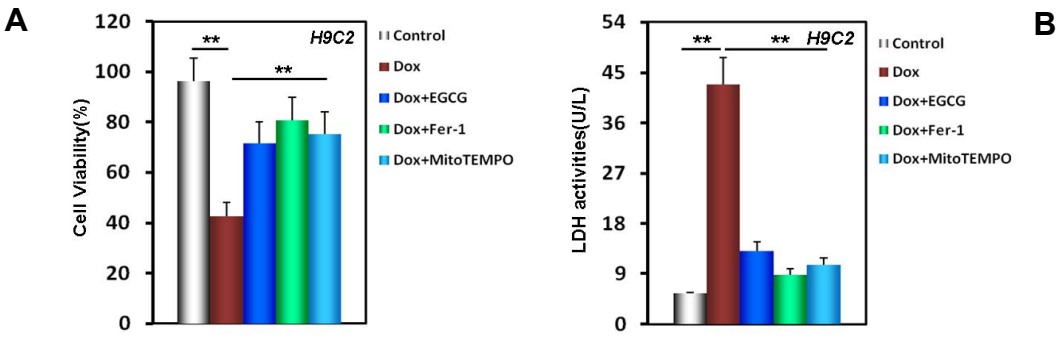

Fig. S8. The cell viability and LDH activity of EGCG pretreatment in H9c2 cells. (A) The cell viabilities of H9C2 cells were pretreated with 20 μM EGCG for 24 h, then exposured to 1 μM, and with or without 20 μM EGCG, 2 μM Fer-1 and 10 μM MitoTEMPO co-treatment for 48 h (The following was done in the same method). (B) The LDH activities in culture medium of H9C2 cells. Values were presented as mean ± SD. For five individual experiments. $^{**}P < 0.01$ compared with the indicated groups.