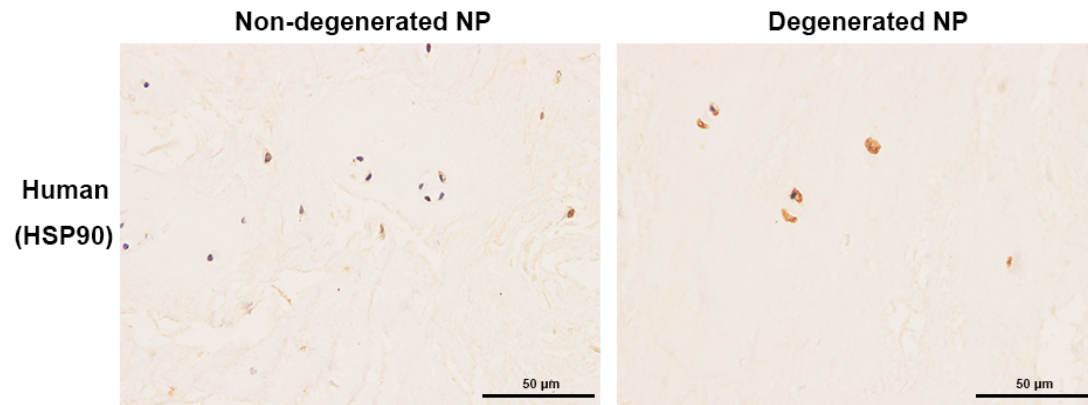
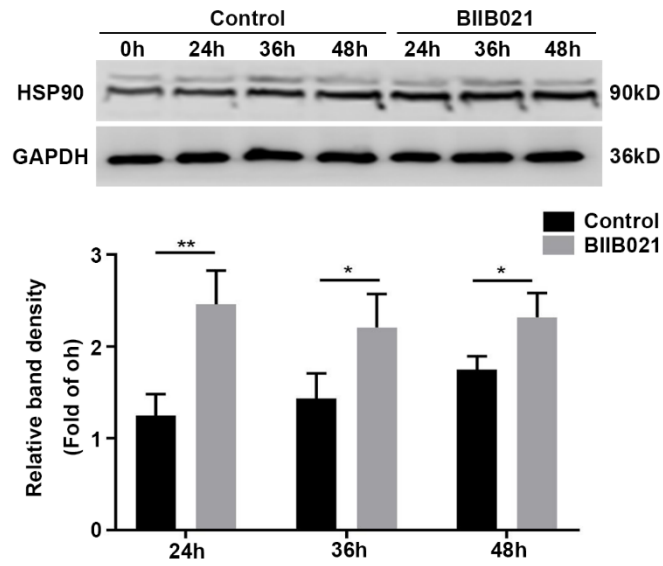


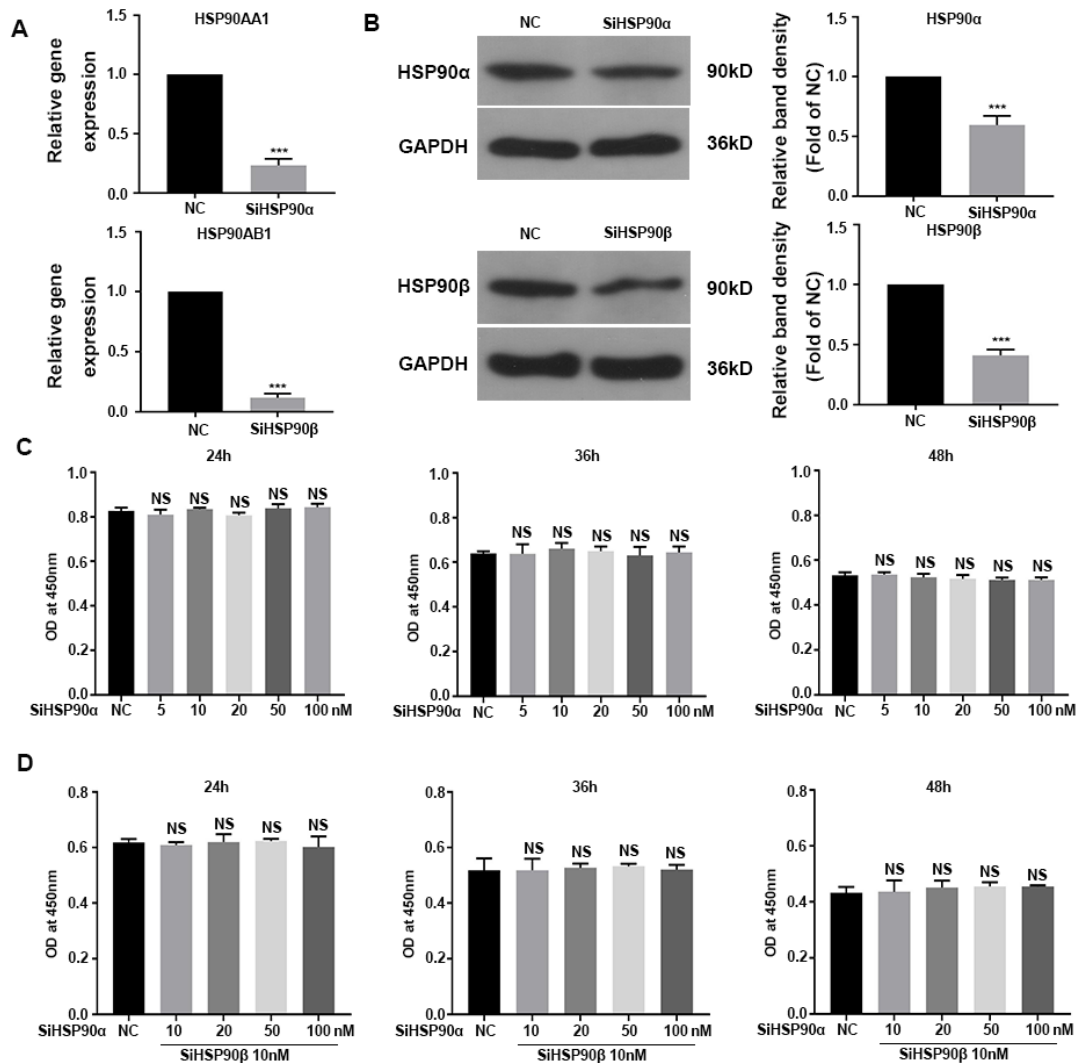
Supplementary Figure 1. The purity of NPSCs identified by Tie2 staining. The images show the typical fluorescence photomicrograph of Tie2 staining of NPSCs (original magnification: $\times 200$). The rate of Tie2-positive cells was $95.91 \pm 1.425\%$.



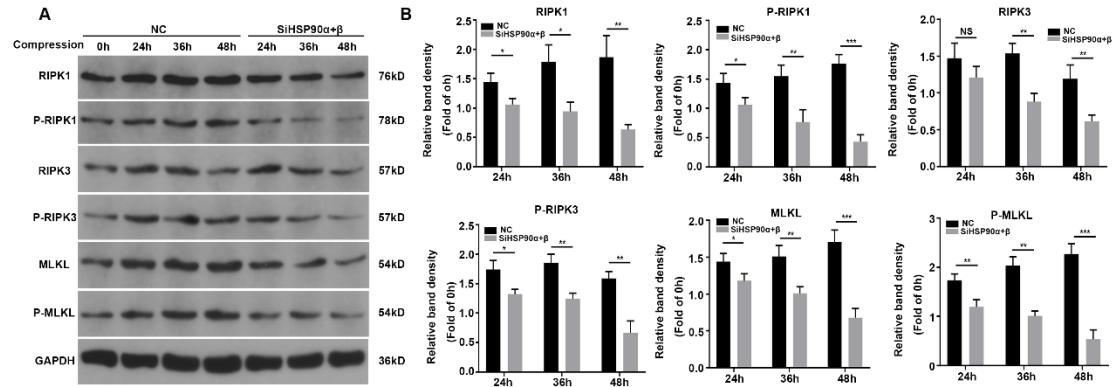
Supplementary Figure 2. IHC staining of HSP90 in non-degenerated (37 years old, male, grade II) and degenerated (43 years old, male, grade IV) human NP tissues (original magnification: $\times 400$).



Supplementary Figure 3. Representative WB graphs and quantitation of the expression levels of HSP90. The data were expressed as mean \pm SD from three independent experiments, and they were analyzed by a two-tailed t-test. (* P < 0.05, ** P < 0.01 vs. control).



Supplementary Figure 4. Transfection of NPSCs with HSP90α siRNA or both the HSP90α and HSP90β siRNAs has no significant influence on cell viability. **(A)** The transfection efficacy of HSP90α (100nM) and HSP90β (10 nM) siRNAs was validated by RT-PCR. **(B)** Representative WB graphs and quantitation of the expression levels of HSP90α and HSP90β. **(C)** The effects of SiHSP90α on cell viability of NPSCs exposed to 24 h, 36 h and 48 h compression measured by CCK-8 assays. **(D)** The effects of co-transfection of SiHSP90β (10 nM) and different concentrations of SiHSP90α on cell viability of NPSCs exposed to 24 h, 36 h and 48 h compression measured by CCK-8 assays. The data were expressed as mean \pm SD from at least three independent experiments, and they were analyzed by a two-tailed t-test. (***) $P < 0.001$ vs. NC, NS, not significant)



Supplementary Figure 5. The effects of HSP90 specific siRNAs on the expression of core necroptosis regulators. **(A-B)** Representative WB graphs and quantitation of the expression levels of RIPK1, P-RIPK1, RIPK3, P-RIPK3, MLKL and P-MLKL. The data were expressed as mean \pm SD from three independent experiments, and they were analyzed by a two-tailed t-test. (* P < 0.05, ** P < 0.01, *** P < 0.001 vs. NC, NS, not significant).