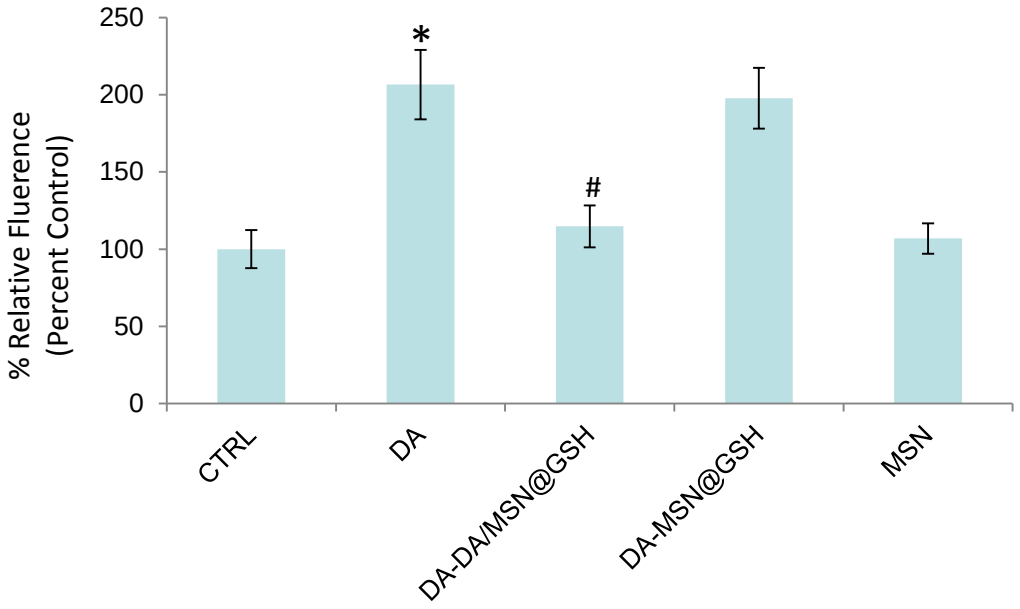
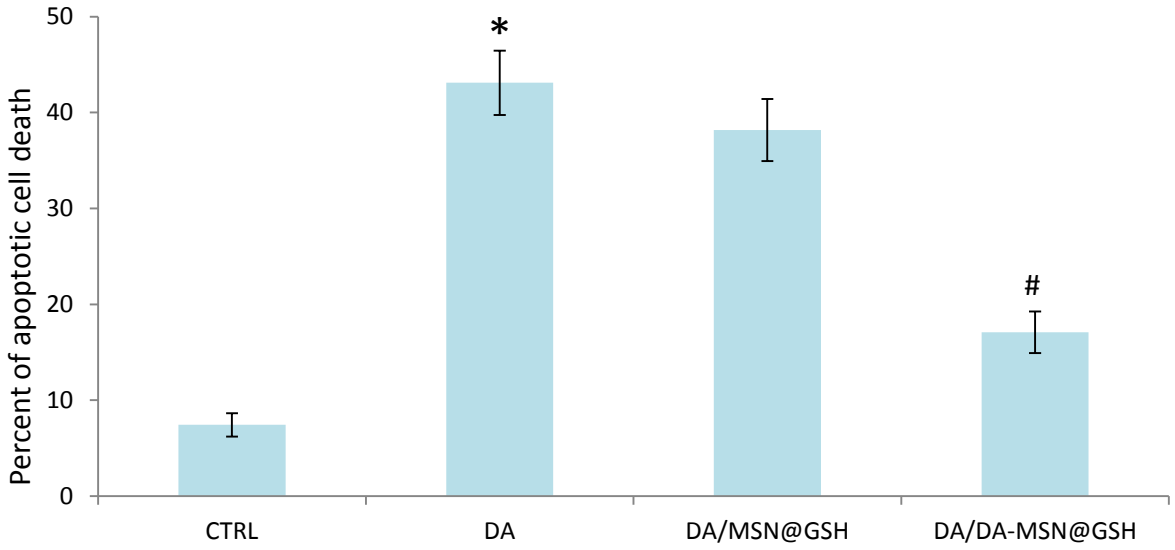
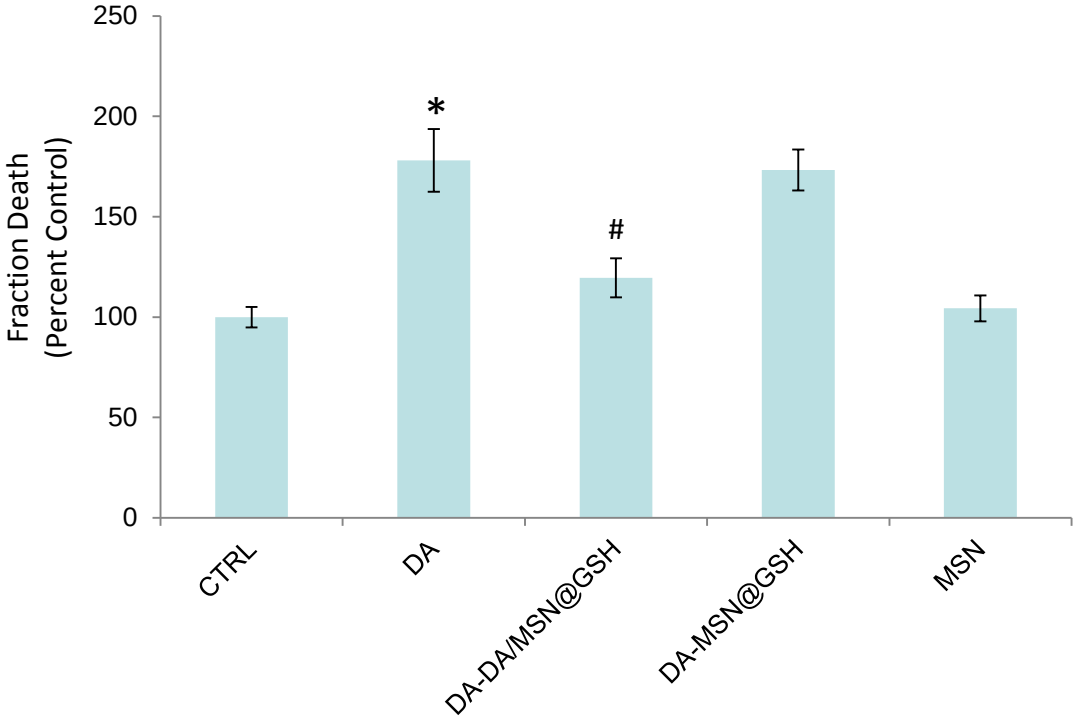
Electronic Supplementary Material (ESI) for MedChemComm.



Supplemental Figure 1: Bar graph summarizing the DA-induced ROS data in the presence/absence of DA/MSN@GSH and DA/DA-MSN@GSH in SH-SY5Y cells through quantitative measurements of ROS fluorescence. For all experiments, $n = 3$; mean $\pm$ SEM; $^{*}P < 0.05$ compared to control group. $^{\#}P < 0.05$ compared to DA group. One-Way ANOVA followed by *post-hoc* SNK test.. CTRL, control group; DA, dopamine treatment group; DA/MSN@GSH, MSN@GSH and dopamine treatment group; DA/DA-MSN@GSH, DA-MSN@GSH and dopamine treatment group.

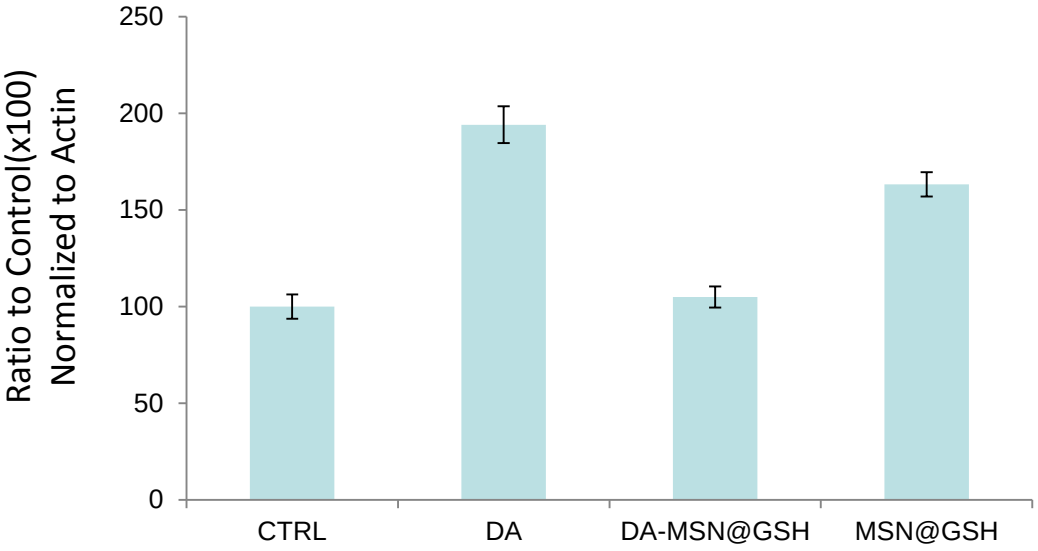


Supplemental Figure 2. Graphical representation of the flow cytometric analysis of cell apoptotic levels. Shown is the percentage of cell population that accounts for cell apoptosis. Data are the mean ± SEM of three independent experiments (n = 3). Symbols: *represents significant difference ($P < 0.05$) between the CTRL and Glu groups; #represents significant difference ($P < 0.05$) between DA and DA/DA-MSN@GSH. One-Way ANOVA followed by *post-hoc* SNK test. CTRL, control group; DA, dopamine treatment group; DA/MSN@GSH, MSN@GSH and dopamine treatment group; DA/DA-MSN@GSH, DA-MSN@GSH and dopamine treatment group.

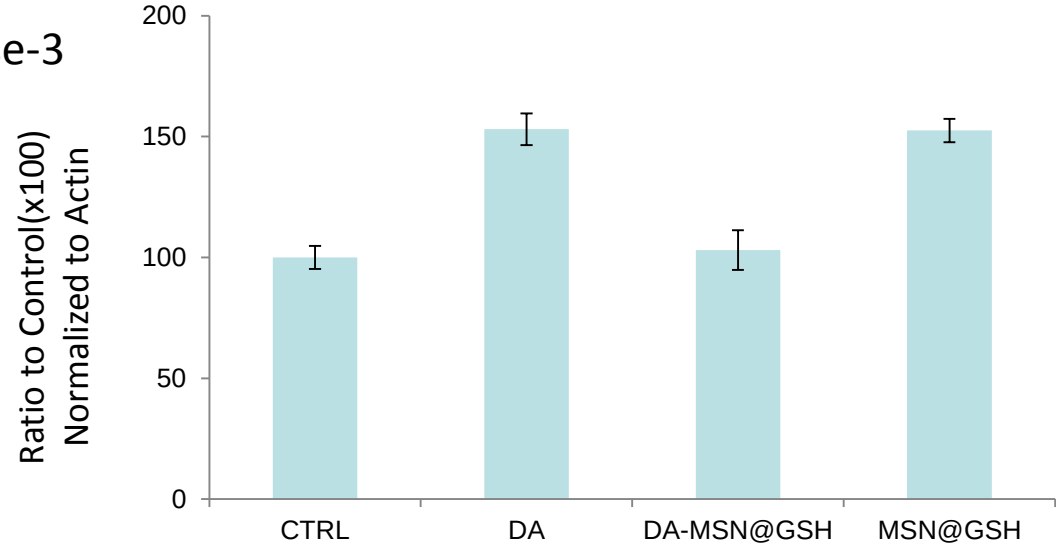


Supplemental Figure 3. Bar graph summarizing the quantitative measurements of PI fluorescence. For all experiments, $n = 3$; mean ± SEM; *$P < 0.05$ compared to control group. #$P < 0.05$ compared to DA group. One-Way ANOVA followed by *post-hoc* SNK test. CTRL, control group; DA, dopamine treatment group; DA/MSN@GSH, MSN@GSH and dopamine treatment group; DA/DA-MSN@GSH, DA-MSN@GSH and dopamine treatment group.

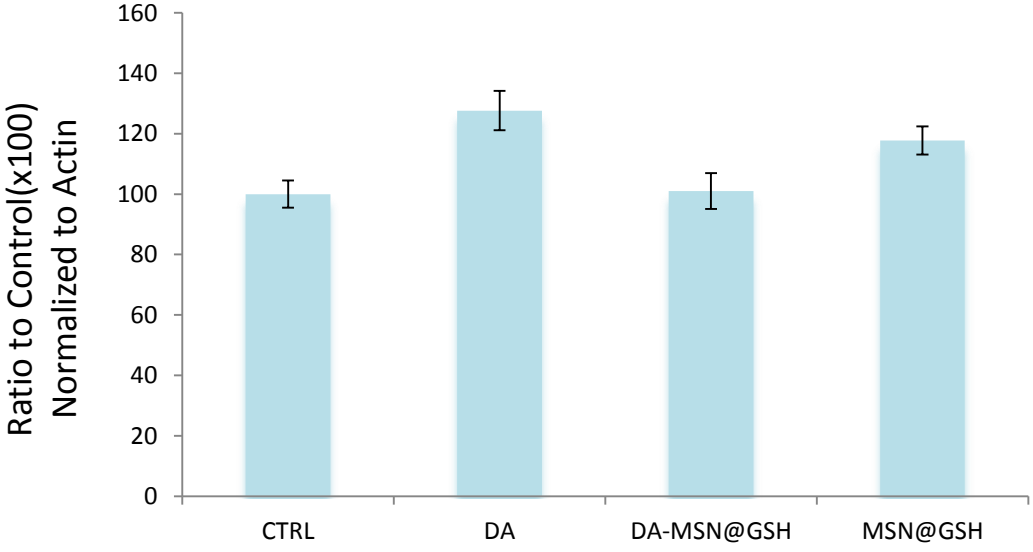
PARP



Caspase-3



P53



Supplemental Figure 4. Bar graph summarizing the quantitative measurements Caspase-3, P53 blots normalized to actin in A. For all experiments, $n = 3$; mean ± SEM; $^{*}P < 0.05$ compared to control group. $\#P < 0.05$ compared to DA group. One-Way ANOVA followed by *post-hoc* SNK test. CTRL, control group; DA, dopamine treatment group; DA/MSN@GSH, MSN@GSH and dopamine treatment group; DA/DA-MSN@GSH, DA-MSN@GSH and dopamine treatment group.