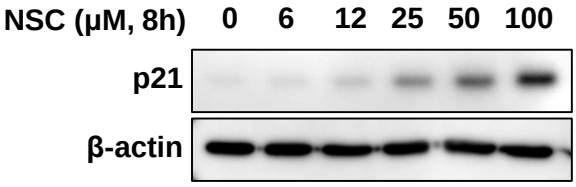



**Figure S1**. Western blot analysis of total cell extracts shows NSC59984 concentration-dependent (6, 12, 25, 50, and 100 μM for 8 h) increase in p21 levels in THP-1 cells. THP-1 cells were treated with various concentrations of NSC59984 for 8 h. Cell lysates were subjected to western blotting using the p21 antibodies.

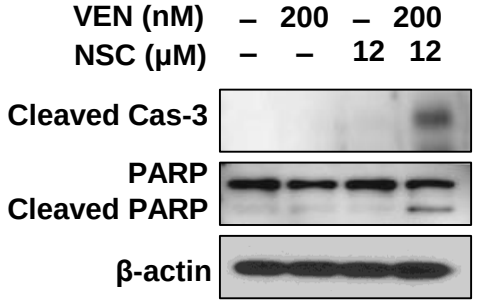



**Figure S2**. Western blot analysis of total cell extracts shows cleaved caspase-3 and PARP after treatment of TP53mut AML cells with venetoclax in the presence or absence of NSC59984 in TP53mut AML cells.

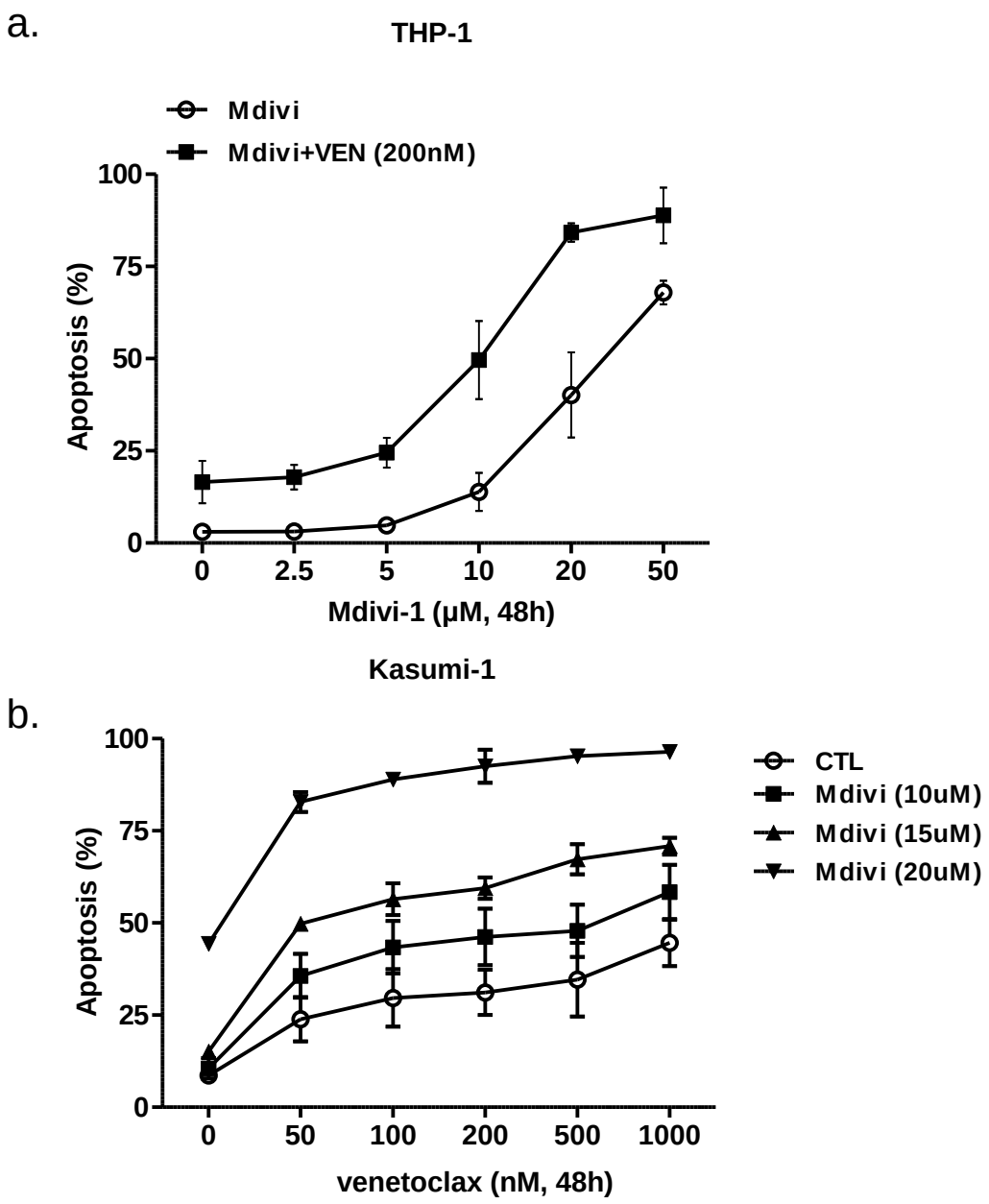
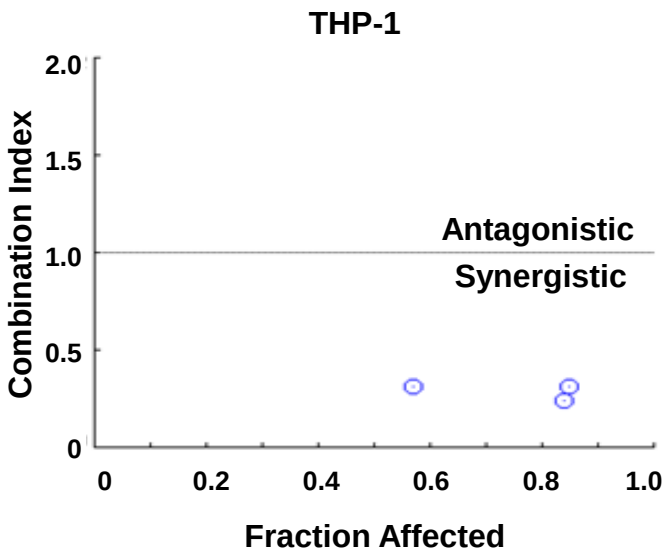



**Figure S3. DRP1 inhibition enhances venetoclax-induced apoptosis by mitochondrial in TP53-mut leukemia cells.** (a) The apoptotic fraction was measured by flow cytometry based on annexin-V/PI exclusion in THP-1 cells treated with 200 nM venetoclax in the presence or absence of various dose of Mdivi-1 for 48 h. (b) Kasumi-1 cells treated with 10 / 15 / 20 μM Mdivi-1 in the presence or absence of various dose of venetoclax for 48 h. Data are the means ± SDs from three independent experiments.

a.




b.

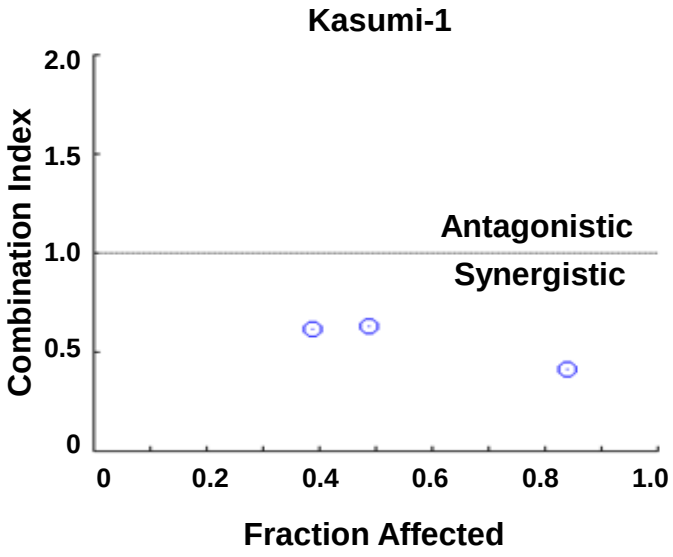



**Figure S4. ComfuSyn analysis to determine the synergistic effect of venetoclax and Mdivi-1 on THP-1 (a) and Kasumi-1 (b) cells.**

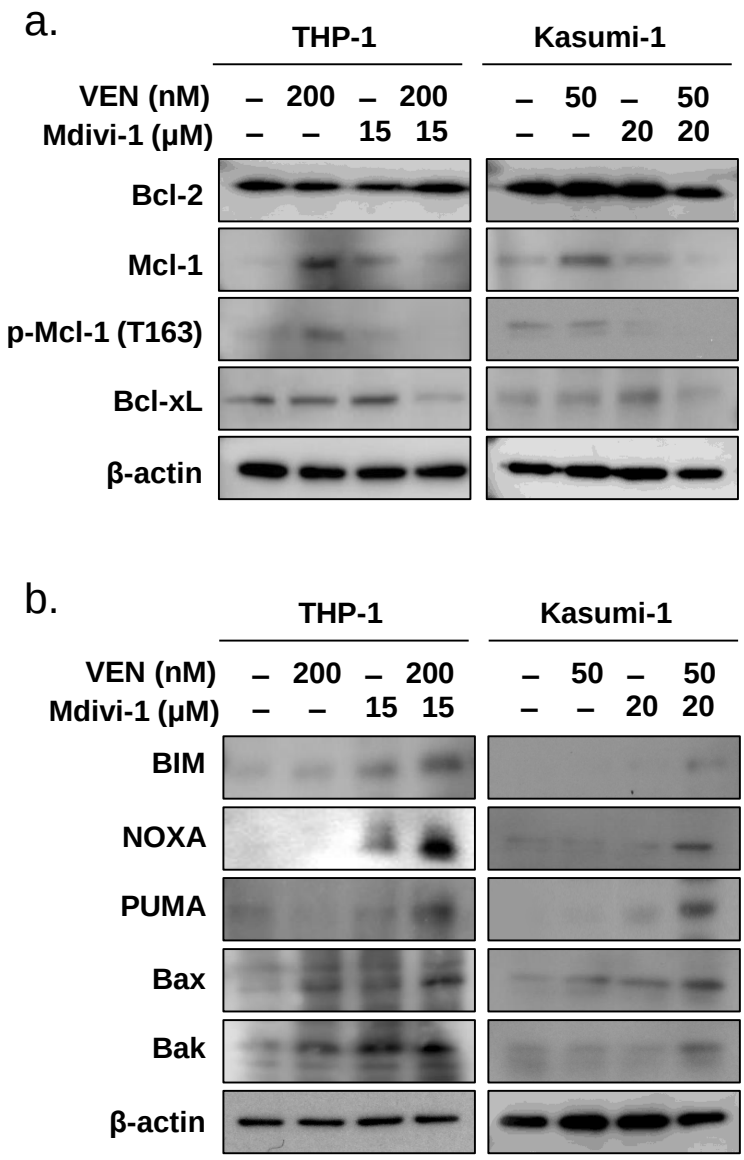



**Figure S5**. Western blot analysis of total cell extracts shows expressions of anti-apoptotic molecules and BCL-2 family proteins after treatment of TP53mut AML cells with venetoclax in the presence or absence of DRP1 inhibition.