

Table S1**Combined effects of olaparib and SAHA on human breast cancer cell lines**

| Cell lines | BRCA1 | BRCA2 | PTEN | Olaparib IC ₅₀ ($\mu\text{mol/L}$, mean \pm SD) | SAHA IC ₅₀ ($\mu\text{mol/L}$, mean \pm SD) | 1:1 combination IC ₅₀ ($\mu\text{mol/L}$, mean \pm SD) | Combination index (ED50) |
|------------|-------|-------|----------------|---|---|--|-----------------------------|
| MDA-MB-157 | WT | WT | WT | >10 | 6.9 \pm 0.42 | 2.23 \pm 0.17 | 0.37953 |
| MDA-MB-231 | WT | WT | WT | 6.34 \pm 0.17 | 5.31 \pm 0.27 | 0.99 \pm 0.01 | 0.28676 |
| MDA-MB-468 | WT | WT | Loss | 3.63 \pm 0.11 | 1.12 \pm 0.07 | 1.59 \pm 0.24 | 1.94014 |
| BT-549 | WT | WT | Low expression | 4.72 \pm 0.06 | 2.74 \pm 0.06 | 0.74 \pm 0.12 | 0.70756 |
| HCC70 | WT | WT | Loss | >10 | 1.78 \pm 0.01 | 0.84 \pm 0.04 | 1.42551 |
| HCC1143 | WT | WT | WT | >10 | 6.71 \pm 0.14 | 2.02 \pm 0.06 | 0.36249 |
| Hs578T | WT | WT | WT | >10 | 3.81 \pm 0.31 | 1.76 \pm 0.08 | 0.9453 |
| T47D | WT | WT | WT | >10 | 1.94 \pm 0.02 | 1.31 \pm 0.07 | 2.88855 |
| MCF7 | WT | WT | WT | >10 | 1.84 \pm 0.08 | 0.66 \pm 0.02 | 0.99978 |
| SK-BR-3 | WT | WT | WT | >10 | 2.87 \pm 0.13 | 0.77 \pm 0.08 | 0.42673 |
| MDA-MB-453 | WT | WT | WT | 5.39 \pm 0.54 | 0.97 \pm 0.01 | 0.96 \pm 0.07 | 2.2001 |
| MCF10A | WT | WT | WT | >10 | >10 | >10 | 1573 |