



**Supplementary figure 1 | (A)** Inhibitory curve of sorafenib on HCC cell lines. HCC cell lines were cultured in our novel spheroid culture device and treated with sorafenib of different concentrations for 3 days. **(B)** Four common PI3K mutations were examined in 5 HCC samples by the Sanger method of DNA sequencing. The result shown that no mutation was detected. **(C)** Expression levels of proteins including H3K9ac, AKT, p-AKT, and c-Myc in 5 HCC samples were detected by western blotting. GAPDH was set as the internal reference. **(D)** The univariate linear regression analysis between IC50 and the levels of H3K9ac, p-AKT, and c-Myc in five HCC samples was calculated with SPSS 20.0 software.