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Supplemental Information

Targeting EGFR/HER2/HER3 with a Three-in-One

Aptamer-siRNA Chimera Confers Superior

Activity against HER2⁺ Breast Cancer

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Figure S1. Dicer digestion assay. H2EH3 chimera was treated with human recombinant dicer for 12 h. The digestion patterns were resolved with 3.5% agarose gel electrophoresis. The gel images showed that the small siRNA was produced after H2EH3 treated with dicer. The produced small siRNA from H2EH3 showed the similar size as EGFR siRNA. The arrow indicate the location of small siRNA

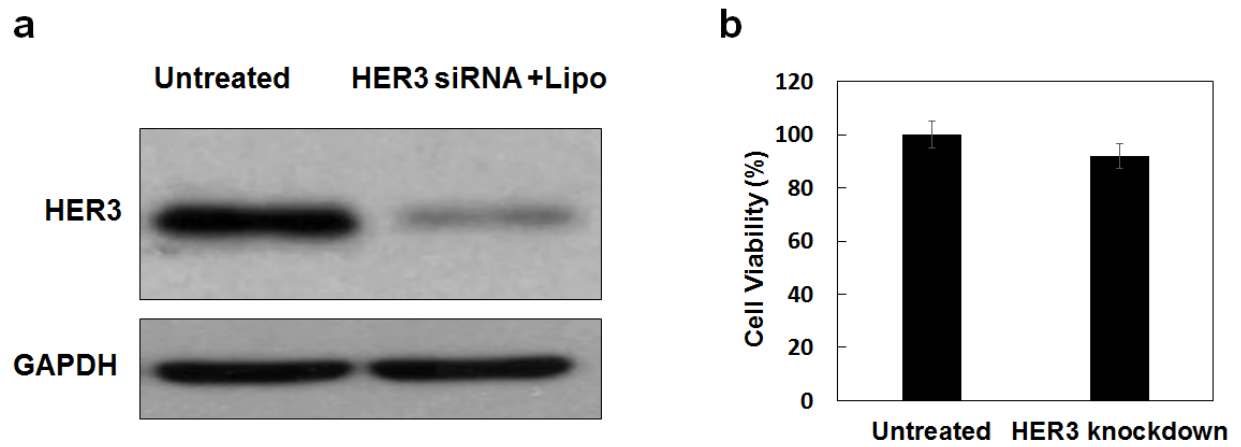


Figure S 2. Evaluation of MCF7 on HER3 dependency. (a) MCF7 cells were transfected with HER3 siRNA by Lipofectamine. The knockdown of HER3 was proved with Western blot. (b) Cell viability assay. The cell viability has about 8% decrease upon HER3 knockdown.

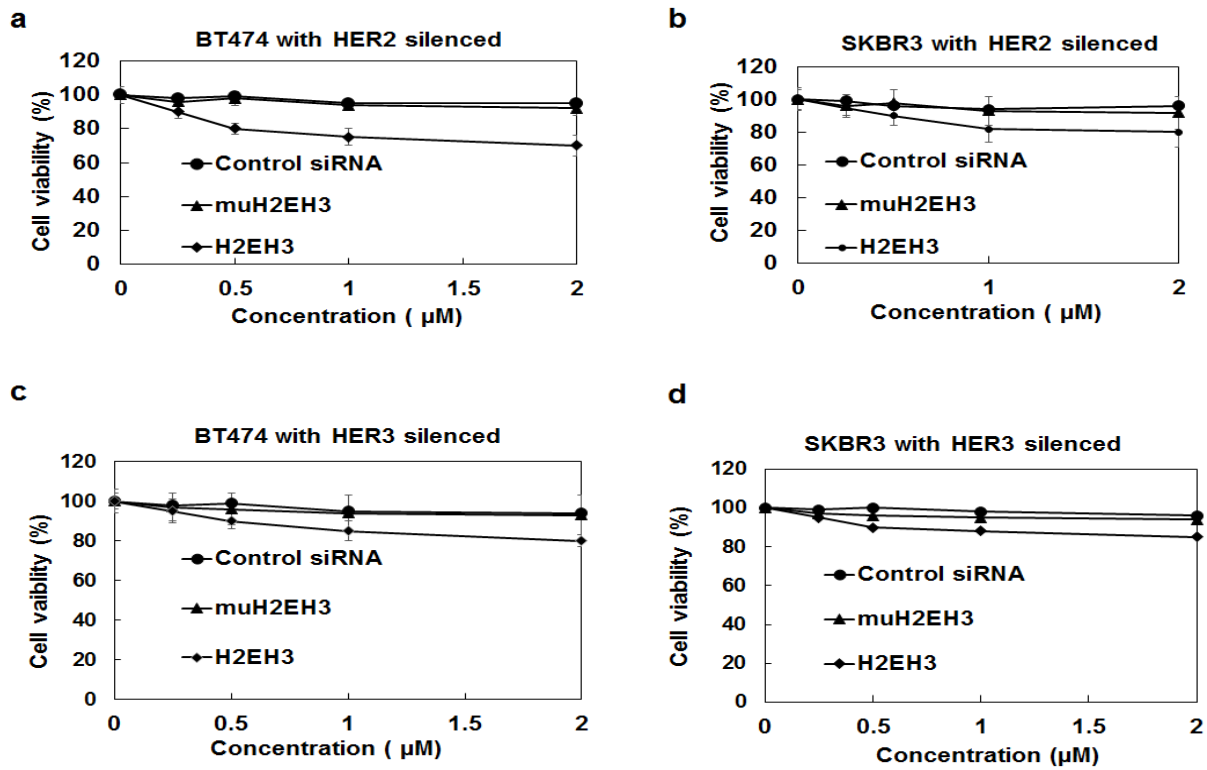


Figure S3. Cytotoxicity of H2EH3 with silenced HER2 or HER3 in BT474 and SKBR3 cells. Data are presented as the mean \pm SD from three independent experiments.

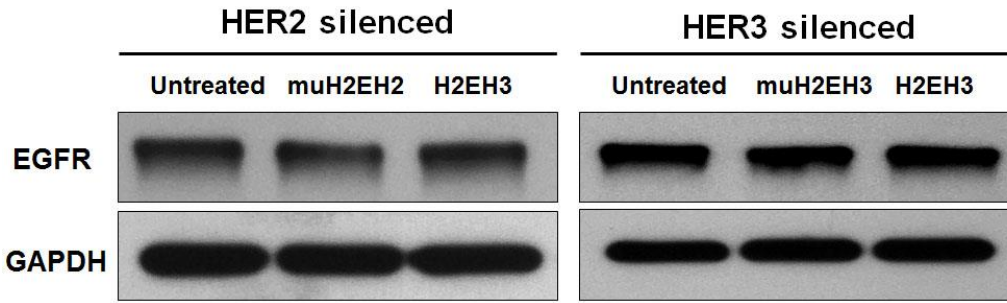


Figure S4. Evaluation of EGFR knockdown after HER2 or HER3 silenced using Western blot. Following HER2 or HER3 silencing, BT474 cells were treated with H2EH3 (1 μ M) for 72h, the cell lysates were probed for EGFR expression.

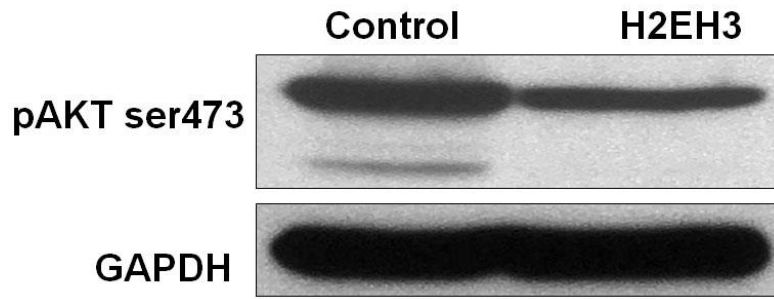


Figure S5. Detection of the blocking of AKT pathway by H2EH3. BT474 cells were treated with or without 1 μ M of H2EH3 for 72h. The expression of pAKTser473 was detected by Western blot.

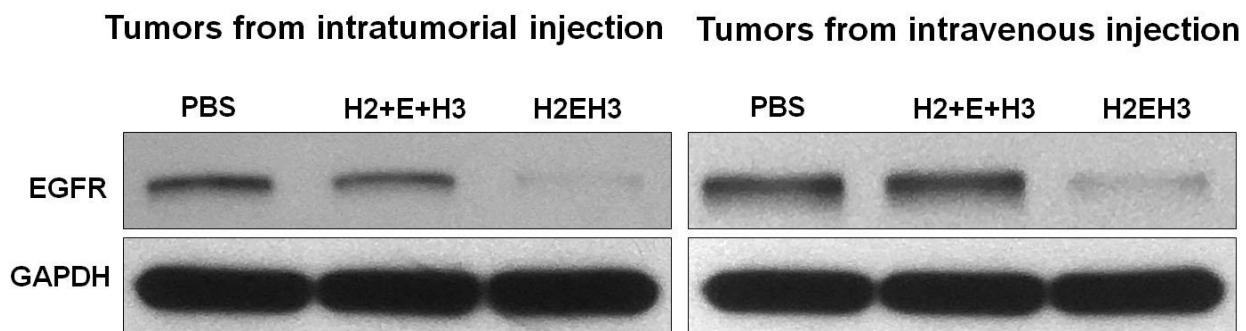


Figure S6. Detection of EGFR knockdown in BT474 xenograft tumor tissues with Western blot. (a) Tumors from mice after intratumor injection of drugs; (b) Tumors from mice after IV injection of drugs.

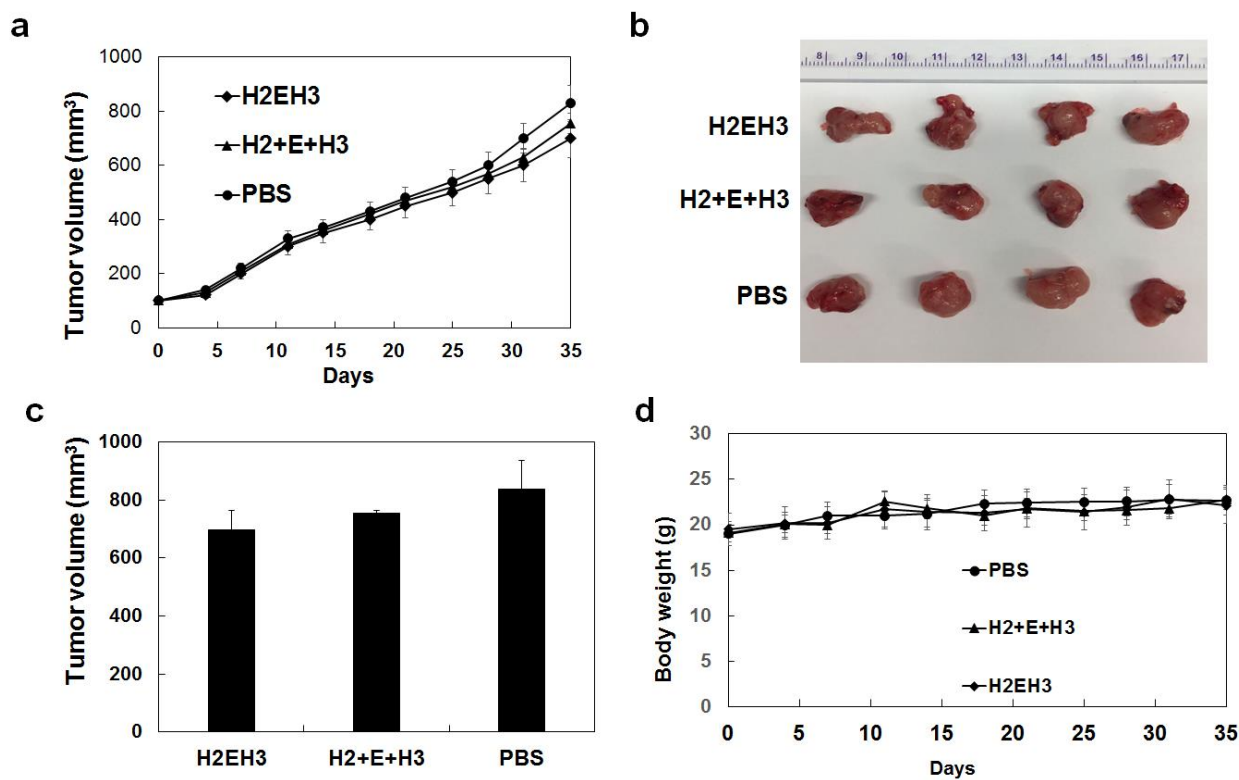


Figure S7. The treatment of efficacy of H2EH3 on MDA231 cell derived xenografts (n=4 per group). (a) Tumor growth curve. (b) Tumors after ex-vivo imaging at the end point. (c). Tumor sizes. (d) Body weight in the process of treatment.