**Yingxia Ying`s Supplementary Materials**

**Figure S1. Protein structure and subcellular location of HFM1**

 (A) 3D structure and main domains and sites of HFM1 in protein’s quaternary structure. (B) Biological sequence diagram of HFM1. (C) Subcellular location of HFM1.

**Figure S2. Overall survival of patients with breast cancer via Kaplan-Meier Plotter**

**Figure S3. The mRNA expression level of HFM1 in subgroups of patients with breast cancer stratified based on age, race and other criteria (TCGA)**

Relative mRNA expression of HFM1 in individuals of any diagnosis ages (A), race categories (B), ER status (C), AJCC tumor stage codes (D), AJCC metastasis stage codes (E).



**Figure S4. The correlation between HFM1 expression and tumor type (A) or stage (B) in breast cancer**



**Figure S5. Ovarian steroidogenesis pathway regulated by HFM1 co-expression genes.** Related nodes were marked by red asterisk.



**Figure S6.**  **Protein-protein interaction between HFM1 and integration of energy metabolism**

 (A) Pathways in **integration of energy metabolism. (B)** Protein-protein interaction between HFM1 and **integration of energy metabolism (STRING)**

**Figure S7. Protein-protein interactions in glucose metabolism (A) and amino acid metabolism (B)**

