**Supplementary Figure Legends**

**Supplementary Figure 1.** Association of overall survival with serum visfatin levels according to adjuvant treatment in breast cancer patients. Patient survival was analyzed by Kaplan–Meier curves. The hazard ratios (HR) and 95% confidence intervals (CI) were calculated using a Cox regression model. *n* = 258. A and B, Survival analysis was performed for patients with low or high serum visfatin levels according to administration of adjuvant radiotherapy (RT). C and D, Survival analysis was performed for patients with low or high serum visfatin levels according to administration of adjuvant chemotherapy (CT). E and F, Survival analysis was performed for patients with low or high serum visfatin levels according to administration of adjuvant hormone therapy (HT). *P* values were determined by two-sided log-rank test.

**Supplementary Figure 2.** Association of disease-free survival with serum visfatin levels according to adjuvant treatment in breast cancer patients. Patient survival was analyzed by Kaplan–Meier curves. The hazard ratios (HR) and 95% confidence intervals (CI) were calculated using a Cox regression model. *n* = 258. A and B, Survival analysis was performed for patients with low or high serum visfatin levels according to administration of adjuvant radiotherapy (RT). C and D, Survival analysis was performed for patients with low or high serum visfatin levels according to administration of adjuvant chemotherapy (CT). E and F, Survival analysis was performed for patients with low or high serum visfatin levels according to administration of adjuvant hormone therapy (HT). *P* values were determined by two-sided log-rank test.

**Supplementary Figure 3.** A–B, Effect of visfatin on cell viability and activation of c-Abl and STAT3 in SKBR-3 breast cancer cells. A, Cell viability of SKBR-3 cells treated with visfatin (0-100 ng/mL) for 72 h was measured by XTT colorimetric assay. *n* = 3. B, Protein expression of phospho-c-Abl, c-Abl, phospho-STAT3, and STAT3 in SKBR-3 cells treated with visfatin (0-100 ng/mL) for 2 h was analyzed by immunoblotting. The data were representative of three independent experiments. C–D, Effect of imatinib and knockdown of c-Abl on protein expression of phospho-STAT3. C, Protein expression of phospho-STAT3 in MDA-MB-231 and MCF7 cells pretreated with imatinib (0 or 10 μM) for 1 h followed by visfatin (0 or 100 ng/mL) treatment for 2 h was analyzed by immunoblotting. D, Lentiviral particles containing short hairpin RNA (shRNA) target sequences for human c-Abl (5’-GAGTTCTTGAAGCATTTCAAA-3’; sh-c-Abl) or luciferase (5’-GCGGTTGCCAAGAGGTTCCAT-3’; sh-Luc) as control were used to infect MDA-MB-231 or MCF7 cells for 48 h before puromycin (2 μg/mL) selection. After selected by puromycin for 2 weeks, the pooled stably infected cells were treated with visfatin (0 or 100 ng/mL) for 2 h followed by immunoblotting analysis for protein expression of c-Abl and phospho-STAT3. The lentiviral particles were obtained from National RNAi Core Facility, Academia Sinica, Taiwan (http://rnai.genmed.sinica.edu.tw/). The data were representative of three independent experiments. E–F, Effect of visfatin on intracellular reactive oxygen species (ROS) production in breast cancer cells. MDA-MB-231 (E) and MCF7 (F) cells treated with visfatin (100 ng/mL) or cisplatin (CDDP; 100 uM) as a positive control for 2 h were loaded with DCFDA (20 μM; Life Technologies, Grand Island, NY, USA) at 37°C for 30 min in a dark environment, followed by flow cytometric analysis (Model FC 500 MCL, (Beckman Coulter, Brea, CA, USA). Mean fluorescent intensity was analyzed using the CXP software (Beckman Coulter). Left panels in (E) and (F) were representative of flow cytometric signals in MDA-MB-231 and MCF7 cells, respectively. *n* = 3. The data were presented as mean±SD. \*P < 0.05; \*\*P < 0.01; two-sided Student’s t test.

**Supplementary Figure 4.** A, Effect of visfatin on anoikis cell death. MDA-MB-231 cells pretreated with visfatin (0, 50 100 ng/mL) for 24 h were trypsinized and re-plated on Costar Ultra Low Attachment 24-wells plates (Corning, NY, USA) at a density of 5x104 cells/well. After cultured for 48 h on the low attachment condition, the cells in suspension were collected and stained with trypan blue for determination of total cells including both dead and viable cells. The extent of anoikis cell death was calculated using the formula of (number of dead cells) / (number of total cells). *n* = 3. B, Effect of imatinib and visfatin treatment on cell viability in luciferase-expressing MDA-MB-231 (MDA-MB-231-Luc) breast cancer cells. Cell viability of MDA-MB-231-Luc cells pretreated with imatinib (0 or 10 μM) for 1 h followed by imatinib (0 or 10 μM) combined visfatin (0 or 100 ng/mL) treatment for 24 h was measured by XTT colorimetric assay. *n* = 3. The data were presented as mean±SD. \*\**P* < 0.01; two-sided Student’s t test.

**Supplementary Figure 5.** Body weight and blood test for orthotopic xenograft nude mice. A, Body weight of the mice (n = 10 per group) was measured weekly for 8 weeks in the orthotopic xenograft nude mice model as described in Fig. 4B. B, After sacrifice of the mice at week 8, the serum of mice in each group were collected and biochemically analyzed for the levels of alanine aminotransferase (ALT), aspartate aminotransferase (AST), blood urea nitrogen (BUN), and creatinine as indication for liver and renal functions of the mice.

**Supplementary Figure 6.** A, Comparison of serum visfatin levels according to molecular subtypes of breast cancer patients. Serum visfatin was measured by enzyme immunoassay and the averaged serum visfatin levels were 38.52±13.68 ng/mL in luminal A (*n* = 119), 43.49±13.28 ng/mL in luminal B (*n* = 66), 41.42±8.93 ng/mL in HER2 (*n* = 25), and 42.79±16.38 ng/mL in triple-negative (n = 48) subtypes of breast cancer patients. The data were presented by box plots, where the denotations of the box plots were identical to and described in the figure legend of Fig. 1A. *P* values were determined by two-sided Student’s t test; \**P* < 0.05. B, Effect of visfatin on protein expression of epidermal growth factor receptor 2 (HER2) in MCF7 breast cancer cells. Protein expression of HER2 in MCF7 cells treated with visfatin (100 ng/mL) for 0-24 h was analyzed by immunoblotting. The data were representative of three independent experiments. C, Database analysis for potential regulatory network. The potential regulatory network between visfatin and HER2 (including all human cell types) was analyzed by QIAGEN’s Ingenuity Pathway Analysis (IPA; Redwood City, CA, USA). HER2, epidermal growth factor receptor 2; JAK2, Janus kinase 2; STAT3, signal transducer and activator of transcription 3; NF-κB, nuclear factor-κB; IL6, interleukin 6; TGF-β, tumor growth factor-β. D, Schematic representation of the proposed signaling in visfatin-promoted breast cancer cell growth and metastasis in this study. We proposed that visfatin promoted breast cancer cell growth and metastatic ability via activation of c-Abl and STAT3 signaling through a putative receptor, which might be in resemblance to epidermal growth factor receptor (EGFR), platelet-derived growth factor receptor (PDGFR), insulin receptor, or insulin-like growth factor receptor (IGFR). More experiments are required to elucidate whether there is a direct interaction between c-Abl and the putative receptor activated by visfatin, or a direct interaction between c-Abl and STAT3 after visfatin stimulation.