SUPPLEMENTAL FIGURE LEGENDS

Supplemental Fig. 1

mRNA (total 37 samples) and protein levels (total 86 samples) of BHLHE40 and BHLHE41 expressed in human endometrial cancer (HEC) specimens, which were divided into two groups depending on the pathological grades. (A and B) mRNA levels of BHLHE40 (A) and BHLHE41 (B) were evaluated between a group of endometrioid adenocarcinoma grade1/2, and that of endometrioid adenocarcinoma 3 and serous adenocarcinoma. (C and D) Allred staining scores of BHLHE40 (C) and BHLHE41 (D) were also evaluated among the same groups shown above. A value of $P< 0.05$ was considered significant. n.s., not significant.

Supplemental Fig. 2

Protein expression analysis of samples used in this study. (A) Protein expression of HEC-6 cells transfected with the same amount of each expression vector, pCDNA3-HA-BHLHE40 (HA-E40), pCDNA3-HA-BHLHE41 (HA-E41), pCDNA3-FLAG-BHLHE40 (FL-E40), or pCDNA3-FLAG-BHLHE41 (FL-E41), were analyzed by immunoblotting. (B) Ishikawa, HEC-1, and HEC-6 cells transduced with lentivirus vectors were used to analyze their BHLHE40/41 expression by immunoblotting. (C) Examples of the immunoblotting analysis showing that the samples used in the reporter assays in Figure 5 expressed similar amounts of BHLHE40 and BHLHE41. (D and E) Examples of the immunoblotting analysis of samples used in reporter assays. (D) HEC-6 cells used in Figure 6F expressed similar amounts of SP1 and BHLHE40/41. (E) HEC-6 cells used in Figure 6G showed the similarly reduced

expression of SP1 by siRNA. BHLHE40/41 were securely expressed in the cell samples.

Supplemental Fig. 3

In vitro cell motility of Ishikawa, HEC-1, HEC-6, and HHUA cells, in which BHLHE40 and BHLHE41 expression was modified. (A) *In vitro* cell motility of Ishikawa, HEC-1, and HEC-6 cells transduced with lentivirus vectors to forcibly express BHLHE40/41. (B) *In vitro* cell motility of HHUA cells, in which BHLHE40/41 were knocked-down with lentivirus vectors. The right graphs showed quantified data. n.s., not significant; *, $P< 0.05$; **, $P< 0.01$.

Supplemental Fig. 4

mRNA analysis by real-time RT-PCR to evaluate the knockdown efficiencies of shBHLHE40S1 and shBHLHE40S2 (A) or shBHLHE41S1 and shBHLHE41S2 (B) in HHUA cells.

Supplemental Fig. 5

Band intensities in Figures 3C and 4A were quantified and shown as graphs. (A) Quantified data of Figure 3C. (B) Quantified data of Figure 4A.

Supplemental Fig. 6

Band intensities in Figures 6A, 6D, and 8D were quantified and shown as graphs. (A) Quantified data of Figure 6A. (B) Quantified data of Figure 6D. (C) Quantified data of Figure 8D.

Supplemental Fig. 7

BHLHE41 suppressed the reporter activity of the pGL4.22-basic empty luciferase vector. (A) Reporter analysis of the pGL4.22-basic empty luciferase vector in HEC-6 cells transfected with vectors to express HA-BHLHE40 and/or FLAG-BHLHE41. The control activity of the pGL4.22-basic empty reporter was adjusted to the same value as that of the mutant pTWIST1+116 reporter in order to evaluate the effects of the expression of BHLHE40/41 (A, white bars) (B) Reporter analysis of the pGL4.22-basic empty luciferase vector in HEC-6 cells transfected with a vector to express MYC-SP1. n.s., not significant; **, $P< 0.01$.