

Description of Additional Supplementary Files

File Name: Supplementary Data 1

Description: Curated list of actin regulators used in the analysis of differential gene expression.

File Name: Supplementary Data 2

Description: List of Microarray data sets used in the analysis of differential gene expression.

File Name: Supplementary Data 3

Description: Analysis of differential gene expression of curated list of actin regulators using microarray datasets.

File Name: Supplementary Data 4

Description: Gene expression analysis of curated actin regulators using Breast Cancer TCGA RNA-seq data set.

File Name: Supplementary Data 5

Description: Heat map showing relative expression of ESR1 and actin regulators.

File Name: Supplementary Data 6

Description: Correlation analysis between expression of ESR1 and actin regulators.

File Name: Supplementary Data 7

Description: ER-ChIP qPCR validation primer sequences.

File Name: Supplementary Data 8

Description: Clinical information on patient samples (each set includes two samples collected before and after treatment with hormone therapy).

File Name: Supplementary Data 9

Description: Primer sequences used in the different qPCR experiments in the manuscript.

File Name: Supplementary Movie 1

Description: Time-lapse Movie of MCF7 Cells Treated with E2 and ER Inhibitors. DIC images were acquired at 1 frame/sec. Scale bar is 10 μ m. WM is "white media" (phenol red-free media supplemented with charcoal-stripped FBS) and RM is "red media" (phenol red containing media supplemented with FBS).

File Name: Supplementary Movie 2

Description: . Time-lapse Movie of T47D Cells Treated with E2 and ER Inhibitor. DIC images were acquired at 1 frame/sec. Scale bar is 10 μ m.

File Name: Supplementary Movie 3

Description: Time-Lapse Movie of MCF7 cells Treated with E2 and ER Inhibitor. Widefield fluorescence microscopy of MCF7 cells expressing eGFP-Lifeact (cyan) were acquired at 1 frame/5min. Scale bar is 10 μ m.

File Name: Supplementary Movie 4

Description: Three-Dimensional Reconstruction of Actin Cytoskeleton in MCF7 Cells Treated with E2 and ER Inhibitor. 3D reconstruction of confocal z-series showing F-actin, pMLC, Arp2/3 and 3D volumetric actin mask.

File Name: Supplementary Movie 5

Description: Time-lapse Movie of SCAB Dissolution by ROCK inhibitor. TIRF microscopy time-lapse movie acquired at 1 frame/20 sec of MCF7 cells and T47D cells expressing iRFP-Lifeact (black) and MLC-mRuby2 (magenta) before and after treatment with 25 μ M ROCK inhibitor (added at time=10 min). Scale bar is 10 μ m

File Name: Supplementary Movie 6

Description: Time-lapse Movie of MCF7 LKO and EVL KD Cells Treated with E2. DIC images were acquired at 1 frame/sec. Scale bar is 10 μ m.

File Name: Supplementary Movie 7

Description: Time-lapse Movie of MCF7 eGFP and eGFP-EVL Cells Treated with ER Inhibitors. DIC images were acquired at 1 frame/sec. Scale bar is 10 μ m.

File Name: Supplementary Movie 8

Description: Time-lapse Movie of control and EVL-overexpressing MCF7 cells treated with 50 μ M ROCK inhibitor. TIRF microscopy time-lapse movies were acquired at 1 frame/20sec. Cells expressed iRFP-Lifeact (black) and MLC-mRuby2 (magenta), with or without EVL (green, shown separately in inset). ROCK inhibitor (50 μ M) was added at time=10 min. Scale bar is 10 μ m.

File Name: Supplementary Movie 9

Description: Time-lapse Movie of control and EVL-overexpressing MCF7 cells treated with 75 μ M ROCK inhibitor. TIRF microscopy time-lapse movies were acquired at 1 frame/20sec. Cells expressed iRFP-Lifeact (black) and MLC-mRuby2 (magenta), with or without EVL (green, shown separately in inset). ROCK inhibitor (75 μ M) was added at time=10 min. Scale bar is 10 μ m.