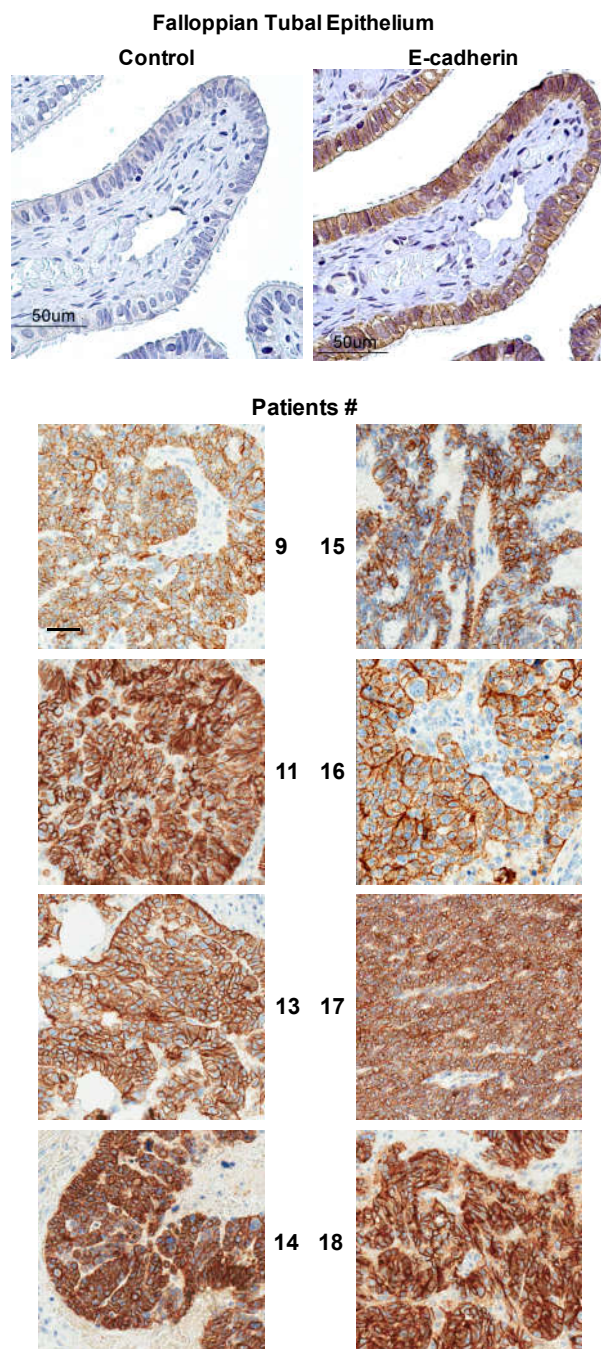
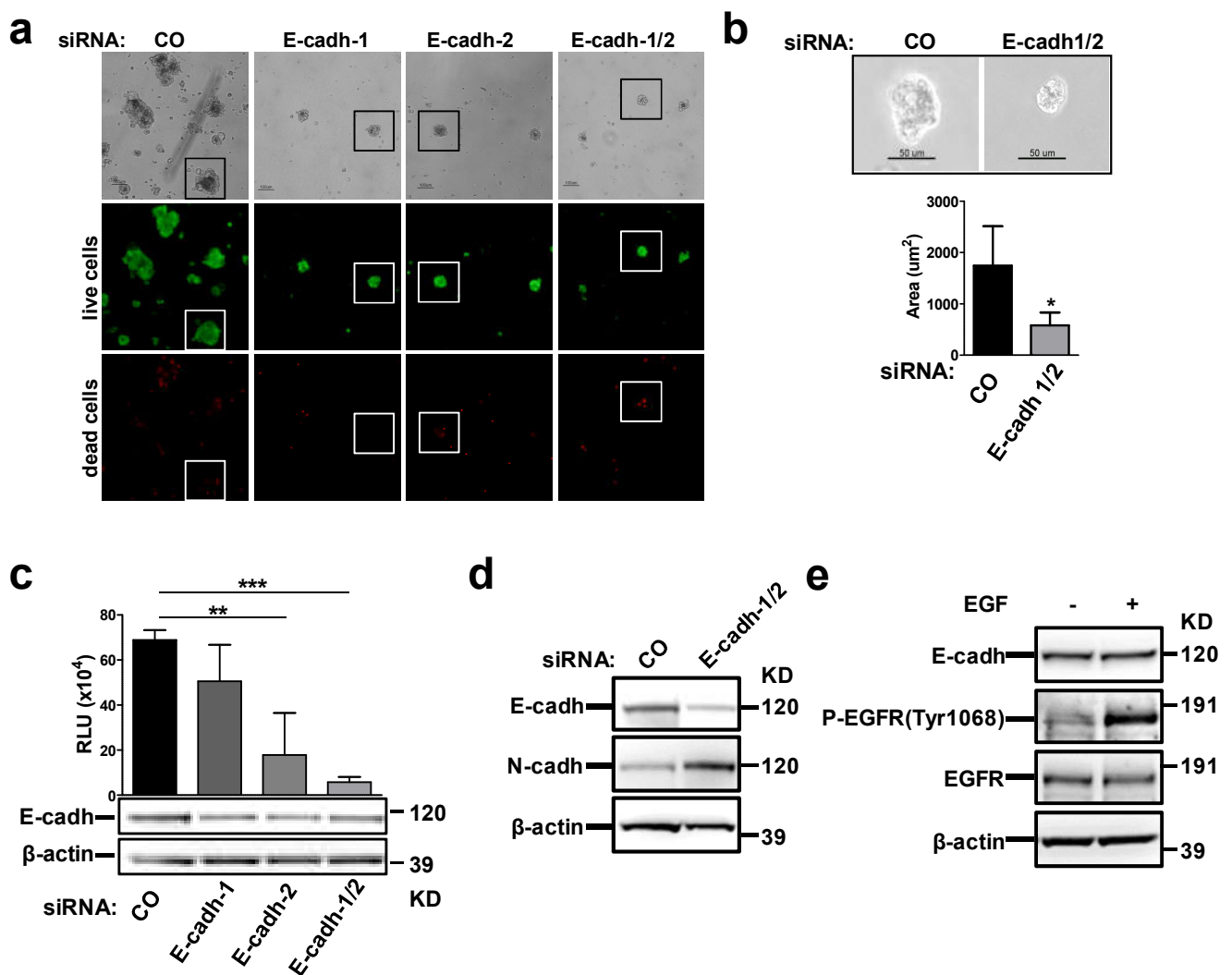




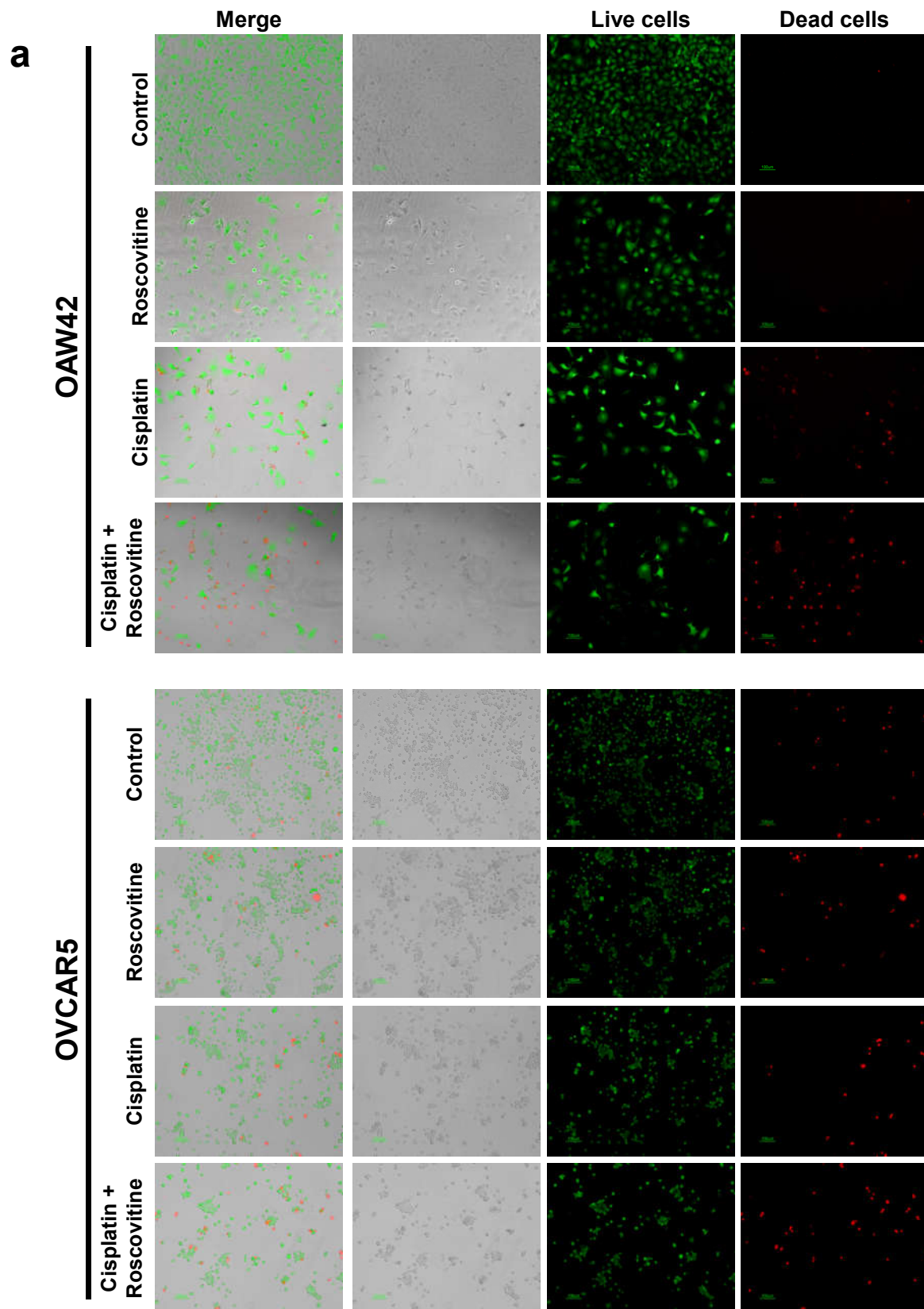
Supplementary Fig. 1

Supplementary Figure 1. Immunohistochemistry (IHC) with anti-E-cadherin on: upper panel, FFPE sections from fallopian tubal epithelium; and lower panel, eight FFPE samples of solid masses from sHG-SOC patients. Control, a section only processed with the secondary antibody. Bar, 50 µm.



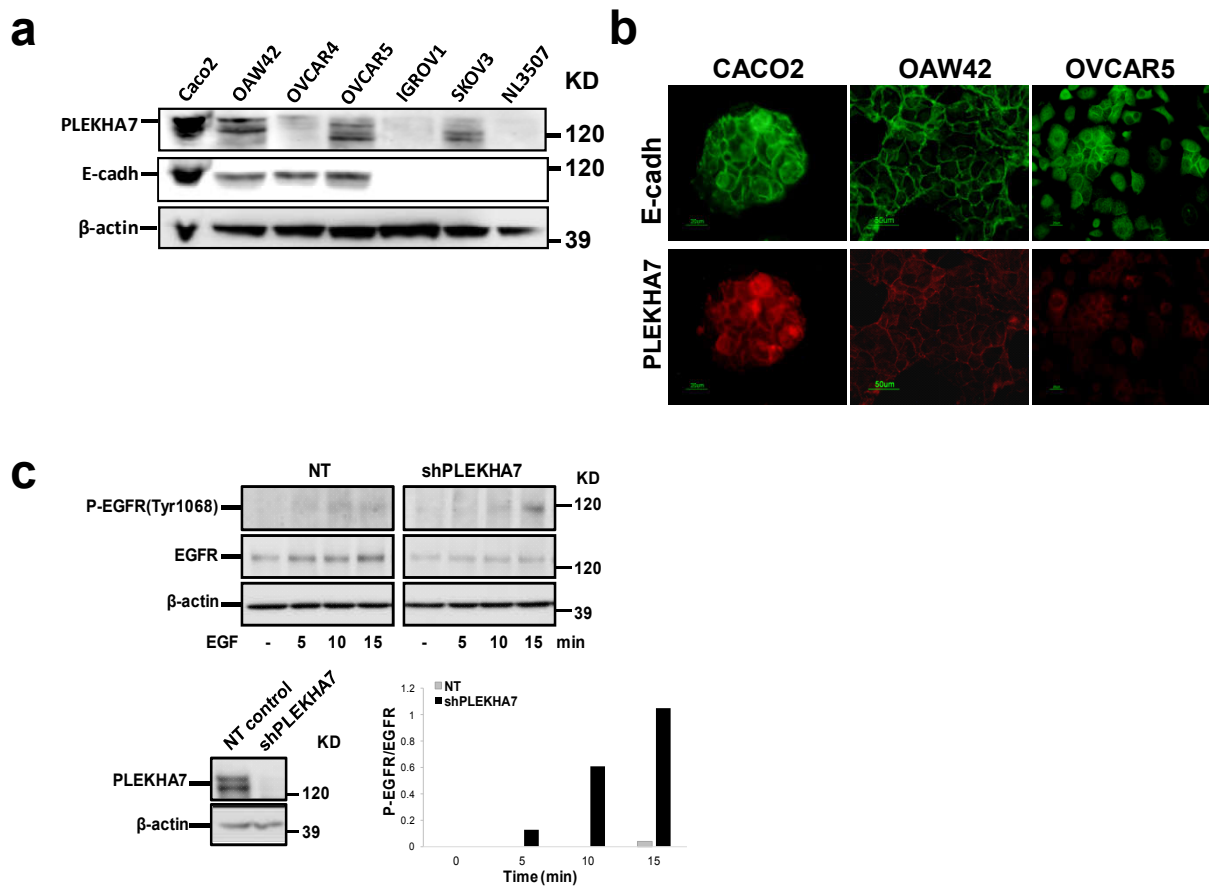
Supplementary Fig. 2

Supplementary Figure 2. **a.** Representative phase contrast images of OAW42 MCAs or fluorescent marked cells stained with LIVE/DEAD™ Viability/Cytotoxicity Kit (ThermoFisher Scientific); bar, 50 μm . The empty box highlights the image reported in Fig. 1f lower left panel. **b.** Upper panel: representative phase contrast images of MCAs of control (CO) and E-cadh (E-cadh-1/2) siRNA treated OAW42 cells grown in Matrigel® for 6 days. Lower panel: measurement of the area of OAW42 MCAs using ImageJ software. Asterisk indicates statistically significant values by Student's t test ($p < 0.05$). **c.** OVCAR5 cells were transiently transfected with a control (CO) siRNA or with two E-cadherin siRNAs, separately (E-cadh-1, E-cadh-2) or pooled (E-cadh-1/2). Upper panel: cell viability assay performed on silenced OVCAR5; the number of cells was evaluated as mitochondrial activity with CellTiter-Glo® Luminescent Cell viability assay. Asterisks indicate statistically significant values by Student's t test ($p < 0.01$). Lower panel: western blotting for evaluation of E-cadherin levels in OVCAR5 cells after 5 days of culture. **d.** Western blotting to evaluate E-cadherin silencing on experiments reported in Fig. 2c. OAW42 cells were transiently transfected with a control (CO) siRNA or with pooled E-cadherin siRNAs (E-cadh-1/2). Immunoblottings were performed with Abs against the proteins reported on the left. β -actin was used as a control for gel loading. **e.** Western blotting on lysates from OAW42 starved (-) for 24 hr and then stimulated with EGF 20 ng/ml (+) for 15 min. Immunoblottings were performed with Abs against the proteins reported on the left. β -actin was used as control for gel loading.



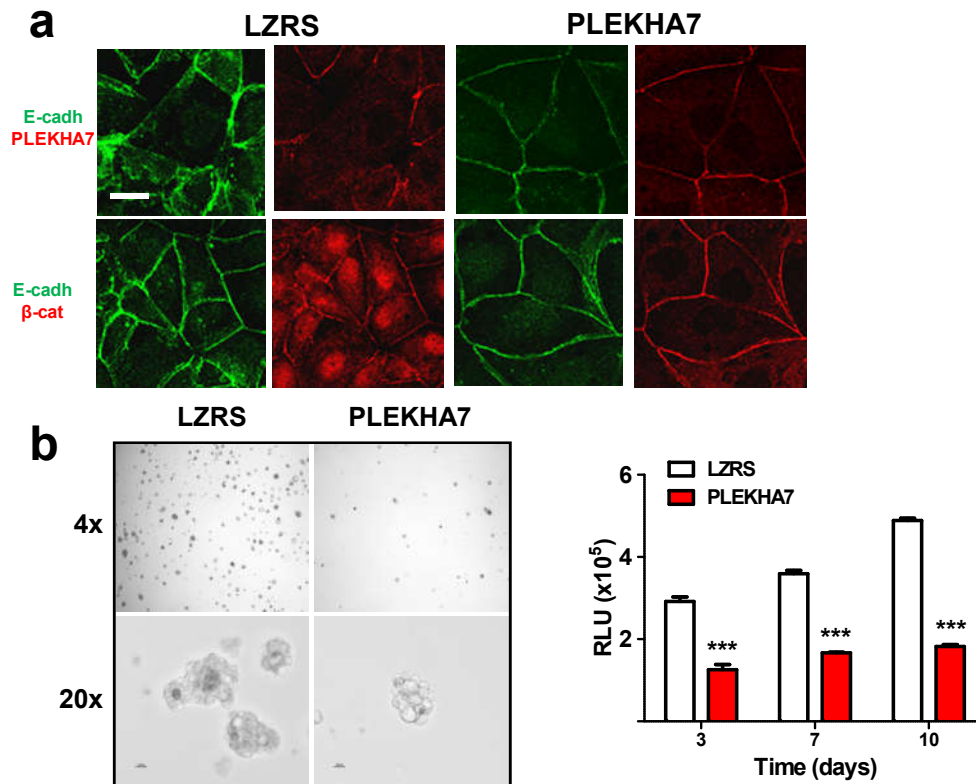
Supplementary Fig. 3

Supplementary Figure 3 . Representative phase contrast images or fluorescent marked OAW42 and OVCAR5 cells stained with LIVE/DEAD™ Viability/Cytotoxicity Kit (ThermoFisher Scientific); bar, 100 μ m. Cells were treated with 10 μ M roscovitine or cisplatin, 3 or 1,5 μ M respectively, alone or in combination for up to 48 h.



Supplementary Fig. 4

Supplementary Figure 4. a. Western blotting on total cell lysates from six EOC cell lines. Immunoblottings were performed with Abs against the proteins reported on the left. β -actin was used as control of gel loading. b. IF performed on fixed Caco2, OAW42, and OVCAR5 cells. Immunostaining was performed with anti-E-cadherin (cadh, green) and anti-*PLEKHA7* (red) Abs. Caco2 was used as positive control of *PLEKHA7* expression and localization. c. Upper panel: representative western blotting on lysates from Caco2 cells infected with a control (NT) shRNA or with *PLEKHA7* shRNA (sh*PLEKHA7*). Cells were starved (-) for 24 hr and then stimulated with EGF 20 ng/ml for 5, 10 and 15 min. Immunoblottings were performed with Abs against the proteins reported on the left. β -actin was used as control for gel loading. Lower left panel: western blotting with anti-*PLEKHA7* Ab to evaluate *PLEKHA7* silencing. Lower right panel: quantitative evaluation of P-EGFR on *PLEKHA7* silenced cells of the experiment reported in the upper panel. The graph reports the ratio P-EGFR/EGFR.



Supplementary Fig. 5

Supplementary Figure 5. a. Confocal IF performed on empty LZRS or LZRS-PLEKHA7 infected OAW42 cells immunostained with Abs reported on the left. Images of single Ab staining are shown. Bar, 20 μ m. The panel reports the stacks reported in Fig. 5d as merge images. **b.** Left panel: representative phase contrast images of spheroids of LZRS or PLEKHA7 infected OAW42 cells grown in Algimatrix™ for 15 days. Morphological changes in spheroids shape and dimension were monitored using an inverted microscope with a 4X or 20X 0,75 NA PanFluor objective (Nikon). Right panel: cell viability assay performed on the same cells; the amount of cells was evaluated with the CellTiter-Glo® Luminescent Cell viability assay after the dissolution of the sponge. Asterisks indicate statistically significant values ($p \leq 0.0001$).