

IGF-1R/epithelial-to-mesenchymal transition (EMT) crosstalk suppresses the Erlotinib-sensitizing effect of *EGFR* exon 19 deletion mutations

Sílvia Cufí^{1,2a}
Cristina Oliveras-Ferraro^{1,2a}
Alejandro Vazquez-Martin^{1,2a}
Violeta Zenobia Torres-García^{1,2}
Bruna Corominas-Faja^{1,2}
Elisabet Cuyàs^{1,2}
Rosa Bonavia³
Joana Visa³
Begoña Martín-Castillo^{2,4}
Enrique Barrajón-Catalán^{5,6}
Vicente Micol^{5,6}
Joaquim Bosch-Barrera^{2,7}
Javier A. Menéndez^{1,2*}

¹Metabolism & Cancer Group, Translational Research Laboratory,
Catalan Institute of Oncology, Girona, Catalonia (SPAIN)=

²Girona Biomedical Research Institute (IDIBGi), Girona, Catalonia, Spain

³Animal Care Facility, IDIBELL,

L'Hospitalet de Llobregat, Barcelona, Catalonia, Spain

⁴Unit of Clinical Research, Catalan Institute of Oncology, Girona, Catalonia, Spain

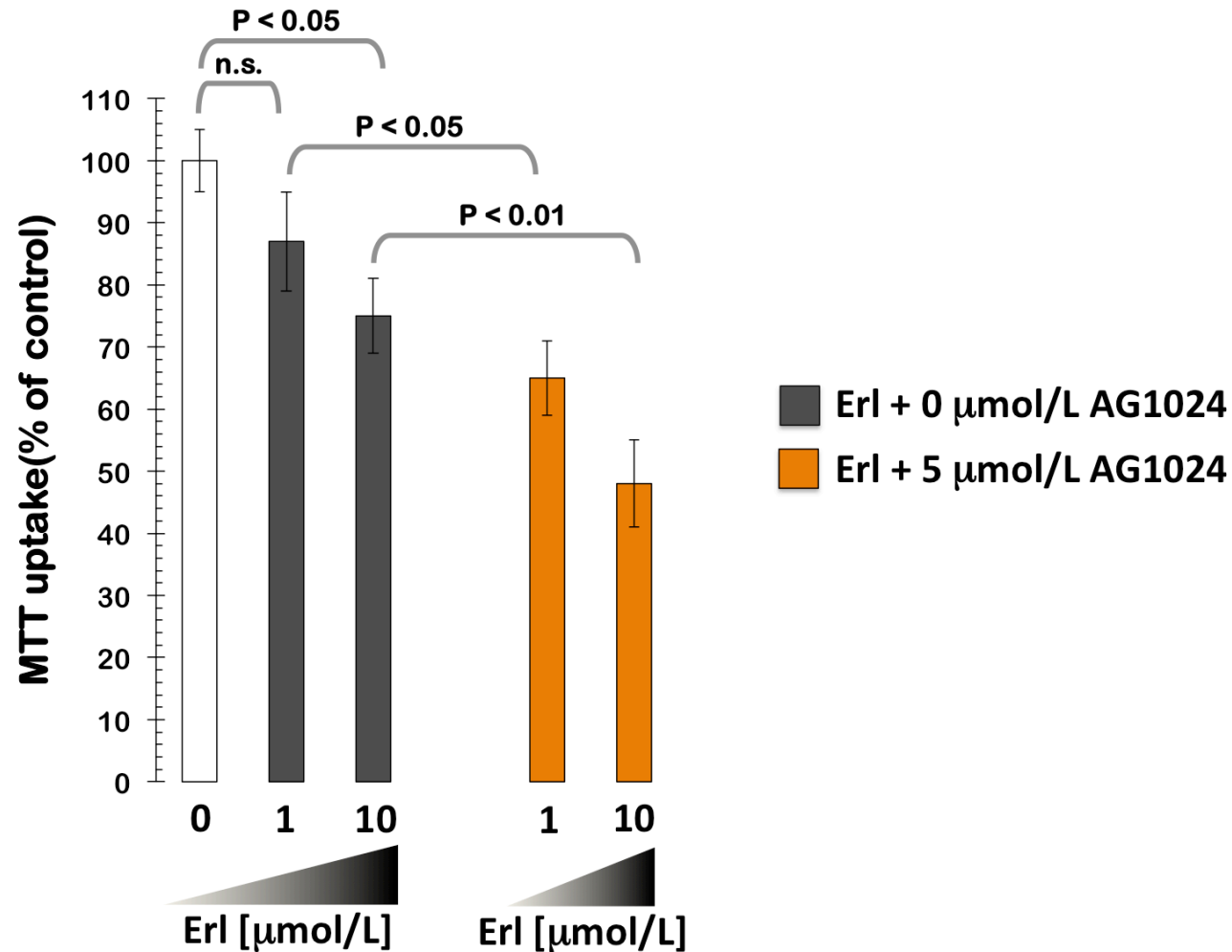
⁵Molecular and Cellular Biology Institute (IBMC),

Miguel Hernández University, Elche, Alicante, Spain,

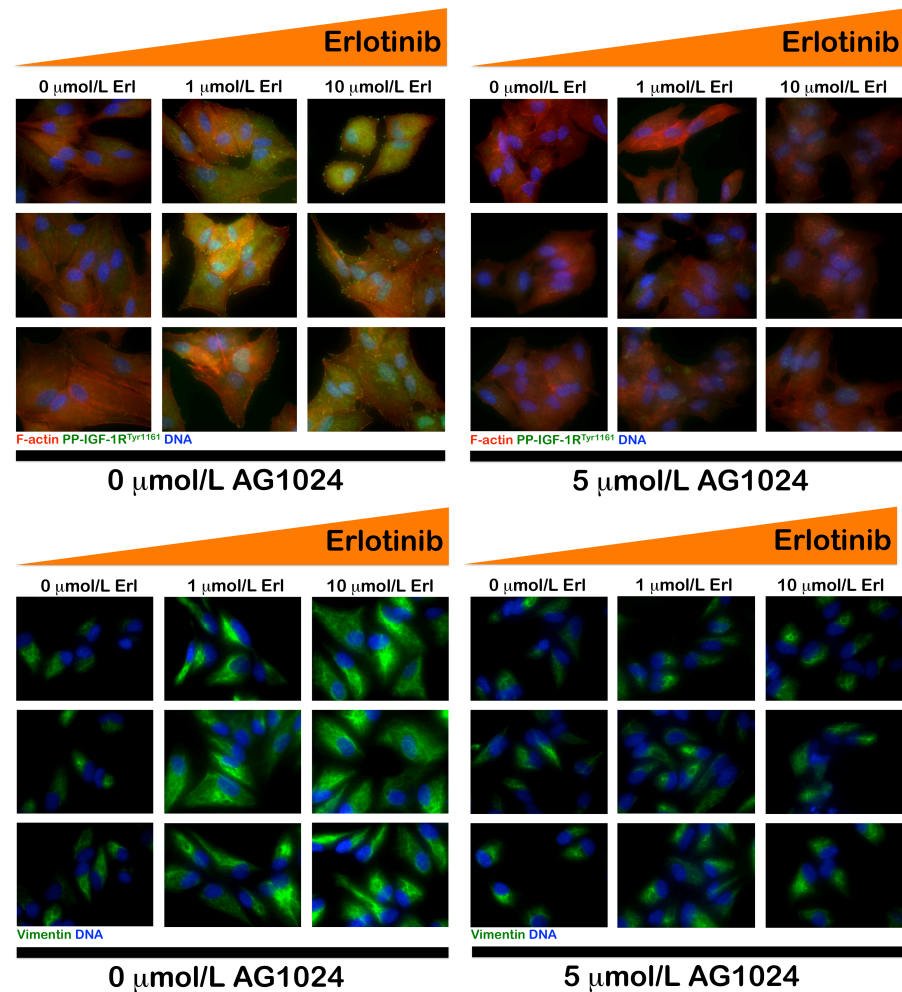
⁶Monteloeder, Inc., Elche, Alicante, Spain,

⁷Medical Oncology, Catalan Institute of Oncology, Girona, Catalonia, Spain.

^a These authors contributed equally to this research



Supplementary Figure 1 Pharmacological inhibition of IGF-1R circumvents EMT-induced Resistance to erlotinib. The effects of concurrent treatment with the EMT inducer TGFβ1 on cell viability of PC-9 cells exposed to erlotinib in the absence or presence of AG1024 were measured by MTT uptake assays as specified. Figure shows dose-response graphs as % of untreated cell populations (untreated control cells=100% cell viability). Results are means (*columns*) and 95% confidence intervals (*bars*) of three independent experiments made in triplicate. Statistically significant differences (one-factor ANOVA analysis) between MTT uptakes in treated and untreated control cells are shown. Statistical tests were two-sided.



Supplementary Figure 2 **Pharmacological inhibition of IGF-1R activity impedes erlotinib-induced mesenchymal features in PC-9 cells.** PC-9 cells were grown until 75%-80% confluence, serum-starved for 24 h, and then treated for 72 h with graded concentrations of erlotinib (0 and 10 μmol/L) in the absence or presence of 5 μmol/L AG1024. *Top panels.* After fixation and permeabilization, cellular co-distribution of PP-IGF-1R^{Tyr1161} and F-actin was assessed following staining with anti-PP-IGF-1R^{Tyr1161} and anti-F-actin antibodies, as specified, and Hoechst 33258 for nuclear counterstaining. *Bottom panels.* After fixation and permeabilization, sub-cellular distribution of the mesenchymal-specific marker vimentin was assessed following staining with an anti-vimentin antibody and Hoechst 33258 for nuclear counterstaining. Images show representative portions of untreated-, erlotinib-, AG1024-, or erlotinib + AG1024-treated PC-9 cells captured in different channels for PP-IGF-1R^{Tyr1161} (green), F-actin (red), vimentin (green), and Hoechst 33258 (blue) with a 20x objective, and merged on BD Pathway 855 Bioimager System using BD Attovision software.