OPPOSITE EFFECTS OF ESTROGEN RECEPTOR ON *PHLDA1* AND *PAWR* GENE EXPRESSION IN BREAST CANCER CELLS

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The estrogen receptors (ER), when activated by estrogens or by diverse signaling pathways, act as transcription factors binding directly to the estrogen response elements (ERE) or to other transcription factors. The pro-apoptotic genes, *PHDLA1* and *PAWR*, show potential consensus sequences, in their promoter regions, that can be recognized by the ER. Therefore, our goal was to investigate the ER effects on the expression of these genes in the breast cancer cells MCF-7. The cells were grown in striped serum and treated with 10nM 17β-estradiol (E2) or 1μM fulvestrant (ICI-182.780) for 2, 6 and 24 hours, and the relative expression of the target genes was analyzed by real time RT-PCR. The cells maintained in striped serum did not show altered *PHLDA1* expression, but showed 2-fold increase in *PAWR* expression. The cells treated with E2 showed 2.5-fold increase in *PHLDA1* expression after 6 hours, and 2-fold decrease in *PAWR* expression after 24 hours, compared to the control cells. However, after 2 and 24 hours of ICI treatment, respectively, the cells showed 2-fold decrease in *PHLDA1* expression and 2.5-fold increase in *PAWR* expression, compared to the control ones. These results indicate that ER activation, both directly and indirectly, induces *PHLDA1* and inhibits *PAWR* expression. Supported by FAPESP.