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HAND2 AND ER EXPRESSION IN BREAST CANCER

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Objectives: To verify the immunohistochemical expression of Heart and Neural Crest Derivatives Expressed Transcript 2 (HAND2), a tumor suppressor protein, in breast tissues with and without breast cancer. To correlate the expression of HAND2 with estrogen receptor (ER). **Methods:** In this case-control study, 19 formalin-fixed, paraffin-embedded tissues were obtained for pathological archives analysis. Tissue sections of breast tissue derived from benign conditions (n=10) and breast cancer (n=9) were analyzed for the intensity of the staining with 3,3'-diaminobenzidine using rabbit polyclonal antibody against HAND2 (Ab60037), at dilution 1:50 at pH 9; ER was analyzed using clone 1D5, monoclonal, Dako) diluído a 1/100. ImageJ software with "color deconvolution" was used for analysis of the expression of these proteins. Statistical analysis was performed using unpaired t-test and correlation of Pearson. The sample size was calculated in order to have a power of 95%, an alpha error of 1% to identify an increase in the primary outcome measure from 15 in the control group to 44 in the experimental group. **Results:** HAND2 expression (mean±SD) in the breast tissue was 15.5±1.9 (cancer) versus 44.9±7 (breast cancer) (p=0.0006). Its expression was present in the nuclear and cytoplasmic compartments of the cells. No correlation was observed between ER and HAND2 (Pearson r = -0.28 (95%CI -0.6–0.22; p=0.2). **Conclusions:** The immunoexpression of HAND2 is reduced in breast cancer, compared with normal breast tissue. The expression of HAND2 is not correlated to ER expression. These findings may guarantee further research as a potential independent prognostic biomarker.