Angiotensin1-7 preferentially targets differentiated epithelial breast cells


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Angiotensin-(1-7) [Ang-(1-7)] has antiproliferative properties. The aim of this work is to analyze the action of Ang-(1-7) treatment in MCF-10F (normal) and in SKBR3 (tumoral) breast cells in the expression of 84 key genes involved in apoptosis, and to assess quantification of the membrane proteins CD24 and CD44 by means of a cytometer (GUAVA) in the MCF10F and in the SKBR3 after 24 hours of Ang-(1-7) stimulation. Flow cytometric analysis using MCF10F showed down- and up-regulates CD24 and CD44 gene expression (about 43% and 16%, respectively). But this difference was no observed for SKBR3. After PCR Array, we found differential expression in MCF10F cells in about 30% (2.1 to 514 fold increases) and in 11% (2.6 to 3.8 fold decreases). For SKBR3, we found that the genes were altered in 5.9% (2.6 to 5.4 fold increases) and 12% (2.1 to 3.3 fold decreases), respectively. Ang-(1-7) appears to modulate the expression of membrane proteins CD24 and CD44 in MCF10F cells, also this hormone seems to induce apoptosis by inducing the expression of apoptosis related genes, such as, Abl1, Akt, Bax, Bcl2 and Hrk. However, the peptide seems to act preferentially in differentiated cells of the normal breast epithelium.

Keywords: Angiotensin-(1-7); breast cells; CD24; CD44.
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