Novel effect of estrogen on RANK and c-fms expression in RAW 264.7 cells

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Abstract

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Temporomandibular disorder (TMD), a progressive disease entity, and osteoarthrosis preferentially affect females, denoting a possible role of estrogen. Using RAW 264.7 cells, the expression of estrogen receptors (ERs) alpha and beta and the consequent effect of estrogen was investigated. We present the novel detection of ER beta expression in RAW 264.7 cells. Furthermore, we innovatively demonstrated the increase in expression of both ER alpha and beta, as well as RANK and c-fms, with estrogen treatment. However, a decrease in expression of c-fms, RANK and ER beta, and nearly no change in the expression of ER alpha were experienced upon further increase in estrogen concentrations. These findings lead us to hypothesize a new mechanism of inflammation in TMD.

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