عنوان مقاله:

Curcumin and sertraline can prevent structural changes induced by stress in rat brain

محل انتشار:

دومین همایش بین المللی زیست شناسی و علوم آزمایشگاهی (سال: 1402)

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خلاصه مقاله:

Stress can cause changes in some brain structures such as the medial prefrontal cortex (mPFC). This area playsan important role in learning and memory performance. In this research, the mPFC of stressed and non-stressedrats is studied after receiving the sertraline and curcumin. Sertraline is an effective antidepressant for thetreatment of major depressive disorder and curcumin is an active component of the turmeric spice with benefiteffects on human health. The rats were divided into seven experimental groups: stress + distilled water, stress +olive oil, stress + curcumin, stress + sertraline, curcumin, sertraline, and control groups. At the end of ۵۶ days,the right mPFCs were removed. Then the volume of mPFC and the total number of neurons and glia wereassessed. In the results, a decrease of ۸%, ۸%, and ۲۴% was ovserved in the volume of the mPFC and itsprelimbic and infralimbic subdivisions, respectively. Furthermore, the total number of the neurons and glial cellswas significantly reduced (۱۱% and ۵%, respectively) in stress (+distilled water or olive oil) group in comparisonto the non-stressed rats (P<۰.۰۱). However, no significant reduction was observed in the volume of the mPFCand its subdivisions as well as the total number of the neurons and glial cells in stress + sertraline and stress +curcumin groups in comparison to the non-treated stressed rats (P<۰.۰۱). The result indicated that treatment ofrats with curcumin and sertraline could prevent the stress-induced changes in mPFC.

کلمات کلیدی:

stress . sertraline . curcumin . cortex