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Alleviating Effect of Salidroside on Cognitive Impairment due to Post-Traumatic Stress Disorder in Rats and the Mechanism

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***SUMMARY*. The effect of salidroside on cognitive impairment due to post-traumatic stress disorder (PTSD) in rats and the mechanism were investigated. The rats were randomized into control, model, and 20, 40. and 80 mg/kg salidroside groups. PTSD model was established in later four groups, and then the later three groups were treated with 20, 40. and 80 mg/kg salidroside groups for 2 weeks, respectively. After treatment, compared with model groups, in 40 and 80 mg/kg salidroside groups the open-field test, elevated cross-maze test. and Morris water maze test outcomes were significantly improved ($P < 0.05$), the serum superoxide dismutase level was significantly increased ($P < 0.05$), the malondialdehyde level was significantly decreased ($P < 0.05$), the hippocampus 5-hydroxytryptamine level was significantly increased ($P < 0.05$), the c-fos protein level was significantly decreased ($P < 0.05$), the B-cell lymphoma-2 protein expression level was significantly increased ($P < 0.05$), and the B-cell lymphoma-2 associated X protein expression level was significantly decreased ($P < 0.05$). Salidroside can alleviating the cognitive impairment due to PTSD in rats, and the mechanisms may be related to its reducing oxidative stress, regulating 5-hydroxytryptamine and c-fos protein levels and antagonizing hippocampus neuron apoptosis.**

RESUMEN. Se investigó el efecto del salidrósido sobre el deterioro cognitivo debido al trastorno de estrés postraumático (TEPT) en ratas y su mecanismo. Las ratas se asignaron al azar a los grupos control, modelo y de salidrósido de 20, 40 y 80 mg/kg. El modelo de TEPT se estableció en cuatro grupos posteriores y luego los tres grupos posteriores se trataron con salidrósido de 20, 40 y 80 mg/kg durante 2 semanas, respectivamente. Después del tratamiento, en comparación con los grupos modelo, en los grupos de salidrósido de 40 y 80 mg/kg la prueba de campo abierto, la prueba de laberinto cruzado elevado y los resultados de la prueba de laberinto de agua de Morris mejoraron significativamente ($P < 0.05$), el nivel de superóxido dismutasa en suero aumentó significativamente ($P < 0.05$), el nivel de malondialdehído disminuyó significativamente ($P < 0.05$), el nivel de 5-hidroxitriptamina del hipocampo aumentó significativamente ($P < 0.05$), el nivel de proteína c-fos disminuyó significativamente ($P < 0.05$), el El nivel de expresión de la proteína del linfoma-2 de células B aumentó significativamente ($P < 0.05$), y el nivel de expresión de la proteína X asociada al linfoma-2 de células B disminuyó significativamente ($P < 0.05$). El salidrósido puede aliviar el deterioro cognitivo debido al TEPT en ratas, y los mecanismos pueden estar relacionados con la reducción del estrés oxidativo, la regulación de los niveles de 5-hidroxitriptamina y proteína c-fos y la antagonización de la apoptosis de las neuronas del hipocampo.

KEY WORDS: apoptosis, c-fos, 5-hydroxytryptamine, oxidative stress, post-traumatic stress disorder, salidroside.

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