

## Alleviating Effect of Paeoniflorin on Experimental Autoimmune Thyroiditis in Rats

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**SUMMARY.** The present study aimed to investigate the alleviating effect of paeoniflorin on experimental autoimmune thyroiditis (EAT) in rats. Forty five Sprague Dawley rat were randomly divided into control, model and treatment groups, 16 rats in each group. In the later two groups, the EAT model was constructed. Then, the treatment group was administrated intragastrically with 40 mg/kg paeoniflorin for eight successive weeks. The serum levels of thyroid function indexes including free tri-iodothyronine (FT<sub>3</sub>), free tetra-iodothyronine (FT<sub>4</sub>) and thyrotropin (TSH), thyroid antibody indexes including anti-thyroglobulin antibody (TGAb) and anti-thyropoxidase antibody (TPOAb) and cytokines including tumor necrosis factor- $\alpha$  (TNF- $\alpha$ ), interleukin (IL) -6, IL-10 and IL-12 were detected. The peripheral blood lymphocyte subsets were determined. Results showed that, compared with model group, in treatment group the serum FT<sub>3</sub>, FT<sub>4</sub>, TSH, TGAb and TPOAb levels were decreased ( $p < 0.05$ ), the peripheral blood lymphocyte CD4<sup>+</sup> cell percentage and CD4<sup>+</sup>/CD8<sup>+</sup> ratio were decreased ( $p < 0.05$ ), the CD8<sup>+</sup> cell percentage was increased ( $p < 0.05$ ), the serum TNF- $\alpha$ , IL-6, IL-10 and IL-12 levels were decreased ( $p < 0.05$ ), and serum IL-10 level was increased ( $p < 0.05$ ). In conclusion, paeoniflorin can alleviate the EAT in rats. The mechanism may be related to the inflammation reduction and immune regulation.

**RESUMEN.** El presente estudio tuvo como objetivo investigar el efecto de alivio del paeoniflorin en la tiroiditis autoinmune experimental (EAT) en ratas. Se dividieron aleatoriamente cuarenta y cinco ratas Sprague Dawley en grupos de control, modelo y tratamiento, 16 ratas en cada grupo. En los dos últimos grupos, se construyó el modelo EAT. Luego, al grupo de tratamiento se le administró por vía intragástrica 40 mg / kg de paeoniflorina durante ocho semanas sucesivas. Los niveles séricos de los índices de función tiroidea, que incluyen triyodotironina libre (FT<sub>3</sub>), tetrayodotironina libre (FT<sub>4</sub>) y tiotropina (TSH), índices de anticuerpos tiroideos que incluyen anticuerpo antitiroglobulina (TGAb) y anticuerpo antitiropoxidasa (TPOAb) y citocinas. incluyendo factor de necrosis tumoral- $\alpha$  (TNF- $\alpha$ ), interleucina (IL)-6, IL-10 e IL-12. Se determinaron los subconjuntos de linfocitos de sangre periférica. Los resultados mostraron que, en comparación con el grupo modelo, en el grupo de tratamiento los niveles séricos de FT<sub>3</sub>, FT<sub>4</sub>, TSH, TGAb y TPOAb disminuyeron ( $p < 0.05$ ), el porcentaje de células CD4<sup>+</sup> de linfocitos de sangre periférica y la relación CD4<sup>+</sup>/CD8<sup>+</sup> disminuyeron ( $p < 0.05$ ), el porcentaje de células CD8<sup>+</sup> aumentó ( $p < 0.05$ ), los niveles séricos de TNF- $\alpha$ , IL-6, IL-10 e IL-12 disminuyeron ( $p < 0.05$ ) y el nivel sérico de IL-10 aumentó ( $p < 0,05$ ). En conclusión, la paeoniflorina puede aliviar la EAT en ratas. El mecanismo puede estar relacionado con la reducción de la inflamación y la regulación inmunológica.

**KEY WORDS:** autoimmune thyroiditis, immune, inflammation, paeoniflorin, rats.

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