Latin American Journal of Pharmacy
(formerly *Acta Farmacéutica Bonaerense)*
Lat. Am. J. Pharm. **37** (12): 2421-7 (2018)

Received: September 4, 2018
Revised version: September 27, 2018
Accepted: September 28, 2018

Baicalin Improves Rats with Polycystic Ovarian Syndrome by Regulation ERα and ERβ in Ovaries

Li-li ZHANG [1,2], Xi-tong WU [1] & Xu WANG [1] *

[1] *The First Clinical Medical College, Nanjing University of Chinese Medicine, Nanjing, Jiangsu210023, China.*

[2] *Department of Traditional Chinese Medicine, Obstetrics and Gynecology Hospital Affiliated to Nanjing Medical University, Nanjing, Jiangsu210023, China*

***SUMMARY*. The aim of this study was to study the effects of baicalin on polycystic ovarian syndrome (PCOS) rat model and the underlying mechanisms. The 27 female SD rats (6 weeks age) were randomly divided into 3 groups (n = 9): NC group, Model group and Treated group which were treated with baicalin (10 mg/kg). Rats were treated for 21 days after the PCOS model was successfully established. Ovarian morphology changes were observed and ERα and ERβ expression were respectively measured by immunohistochemistry (IHC), Western Blot and RT-PCR in difference groups Compared with NC group, the number of follicular cystic dilatation in the model group was increased and the granulosa cells were decreased. After the treatment, the number of follicular cystic dilatation was decreased and the granulosa cells were increased compared with model group. By IHC, WB and RT-PCR methods, the ERα and ERβ expressions of Model group were significantly suppressed compared with those of NC group (P < 0.001, respectively). However, with baicalin supplement, compared with Model group, the ERα and ERβ expressions of Treatment group were significantly enhanced (P < 0.001, respectively). Baicalin could improve PCOS by regulating ERα and ERβ expressions *in vivo*.**

RESUMEN. El objetivo de este trabajo fue estudiar los efectos de baicalina en el modelo de rata de síndrome de ovario poliquístico (SOP) y los mecanismos subyacentes. Las 27 ratas SD hembra (6 semanas de edad) se dividieron aleatoriamente en 3 grupos (n = 9): grupo CN, grupo modelo y grupo tratado que se trataron con baicalina (10 mg/kg). Las ratas se trataron durante 21 días después de que el modelo PCOS se estableció con éxito. Se observaron cambios en la morfología ovárica y la expresión de ERα y ERβ se midieron respectivamente por inmunohistoquímica (IHC), Western Blot y RT-PCR en grupos de diferencia. En comparación con el grupo NC, el número de dilatación quística folicular en el grupo modelo aumentó y las células de la granulosa disminuyeron después del tratamiento, el número de dilatación quística folicular disminuyó y las células de la granulosa aumentaron en comparación con el grupo modelo. Mediante los métodos IHC, WB y RT-PCR, las expresiones ERα y ERβ del grupo Modelo se suprimieron significativamente en comparación con las del grupo NC (P < 0,001, respectivamente). Sin embargo, con el suplemento baicalina, en comparación con el grupo Modelo, las expresiones ERα y ERβ del grupo Tratamiento se mejoraron significativamente (P < 0.001, respectivamente). Baicalina podría mejorar PCOS mediante la regulación de expresiones ERα y ERβ *in vivo*.

KEY WORDS: baicalin, ERα, ERβ, PCOS.

* Author to whom correspondence should be addressed. *E-mail:* wangxu20180320@163.com

ISSN 0326 2383 (printed ed.)
ISSN 2362-3853 (on line ed.)