



Icaritin Prevents Neurotoxicity Induced by Amyloid- β Through Increasing AMPK Phosphorylation

Fei FENG, Yuanyuan LI, Han TONG, Lin TU & Yong LUO *

*Department of Neurology, The First People's Hospital of Zunyi City &
Third Affiliated Hospital of Zunyi Medical University, Zunyi 563002, Zunyi, China*

SUMMARY. This work aims to investigate the protective effect of icaritin (ICT) on amyloid- β peptide (A β)-induced neurotoxicity, and then to explore that if this effect of ICT is through increasing AMPK phosphorylation level in rat's brain. In our study, 40 SD rats were divided into control group, model group and three dosages of ICT groups respectively. Model and treatment groups were injected with A β_{25-35} in rat hippocampus after being gavaged with ICT for 3 days, and were gavaged with ICT for another 2 weeks. Learning and memory function of every rat was observed by water maze experiment, and the quantity of phosphorylation AMPK (pAMPK) and the level of the A β_{1-40} and pAMPK level in rat hippocampus was detected by ELISA and Western Blot respectively. Results show that ICT prevents the learning and memory deficits of A β -induced rats, may be through increasing the level of pAMPK and decreasing the level of A β_{1-40} .

RESUMEN. Este trabajo tiene como objetivo investigar el efecto protector de la icaritina (ICT) en la neurotoxicidad inducida por el péptido β amiloide (A β), y luego explorar si este efecto es a través del aumento del nivel de fosforilación de AMPK en el cerebro de rata. En nuestro estudio, 40 ratas SD se dividieron en grupo control, grupo modelo y tres dosis de grupos de ICT, respectivamente. El modelo y los grupos de tratamiento se inyectaron con A β_{25-35} en el hipocampo de rata después de haber sido sometidos a electroestimulación con ICT durante 3 días, y se administraron con ICT durante otras 2 semanas. El aprendizaje y la función de memoria de cada rata se observó por el experimento del laberinto de agua, y la cantidad de fosforilación AMPK (pAMPK) y el nivel de la A β_{1-40} y pAMPK nivel en el hipocampo de rata se detectó por ELISA y Western Blot, respectivamente. Los resultados muestran que ICT previene los déficit de aprendizaje y memoria de las ratas inducidas por A β , quizás a través del aumento del nivel de pAMPK y la disminución del nivel de A β_{1-40} .

KEY WORDS: Alzheimer's disease, AMP-activated protein kinase, amyloid β -peptide, icaritin.

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