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Reduce apoptosis and enhance autophagy by exercise training and resveratrol in the cortex of aging rats

Chi-Wen Huang¹, Wei-Wen Kuo¹, Jing-Ying Lin³ and Chih-Yang Huang^{1,2}

¹China Medical University, Taiwan

²Asia University, Taiwan

³Central Taiwan University of Science and Technology, Taiwan

The up regulation of apoptosis, reactive oxygen species (ROS) and disturbances of autophagy may involve in brain aging process. Exercise plays an important role to enhance human health. Resveratrol is a natural polyphenol primarily found in grapes and red wine that offers multiple beneficial effects including neuroprotection and metabolic improvement. In this study, we tested effects of resveratrol supplementation (15 mg/kg/day, 4 weeks, IG), swimming exercise training (40 mins/day, 4 weeks) or resveratrol with swimming exercise training on the apoptosis and autophagy pathways in the cerebral cortex of aging rats (24-month-old). Exercise training and resveratrol supplementation up regulate beclin-1, Atg7 and LC3B expression. On the other hand down regulate apoptosis proteins such as BAX, BAD and caspase 3. The results suggest that exercise training and resveratrol not only enhance autophagy but also reduce the apoptosis pathway which may benefit the aging brain.

Biography

Wen Chi hails from Taiwan. Currently she is studying at Graduate Institute of Basic Medical Science at China Medical University of Taiwan. She works at International Medical Service Center of China Medical University Hospital. She works with the world renowned plastic surgery professor Hung-Chi Chang and assist him in improving the quality of life for patients in Taiwan and also from other countries. Her research interests are study is the change of protein expression with aging of brain.

spring07255@gmail.com

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