

P93

Effect of *Tetragonia tetragonioides* on Acetylcholinesterase and Lipoxygenase Activity *in vitro*

Hye Jung Choi, Seon A Kim¹, Dong Wan Kim², Young Whan Choi³, Jum Soon Kang³,
Young Guen Lee⁴, Tae Yeon Kim⁵, Yong Kee Jeong⁵ and Woo Hong Joo^{1*}

Interdisciplinary Program in Biotechnology, ¹Department of Biology, ²Department of Microbiology, Changwon National University, Changwon 641-773. ³School of Bioresource Science, ⁴School of Applied Life Science, Busan National University, Miryang 627-706. ⁵Department of Biotechnology, Dong-A University, Busan 604-714

Tetragonia tetragonioides has long been used as a traditional remedy for stomach cancer and furuncle. We investigated antioxidant, acetylcholinesterase (AChE) and lipoxygenase(Lox) activity for the solvent extracts of *Tetragonia tetragonioides*. The CH₂Cl₂ and EtOAc fractions of *Tetragonia tetragonioides* were exhibited a distinctive antioxidant activity. In addition, the MeOH extract of *Tetragonia tetragonioides* was tested for acetylcholinesterase and butyrylcholinesterase inhibitory activity using the Ellman colorimetric method. AChE inhibitory activity was also detected by a thin-layer chromatography (TLC) bioautographic assay. The MeOH fraction of *Tetragonia tetragonioides* was exhibited moderate inhibition of the enzyme, defined as more than 40% at 1 mg/ml.

Key words: *Tetragonia tetragonioides*, acetylcholinesterase (AChE), lipoxygenase(Lox)

P94

Phosphorylated Wnt Coreceptors Directly Inhibit GSK3beta in Wnt/beta-catenin Signaling

Shunfu Piao, Suhwan Yeom, Seonghun Jung and Nam-Chul Ha

*College of Pharmacy and Research Institute for Drug Development,
Pusan National University, Busan 609-735, Korea*

Wnt/beta-catenin signaling pathway is activated by inhibition of GSK3beta in the Axin complex composed of a scaffold protein Axin, beta-catenin and GSK3beta. Recently, it was reported that Wnt induces phosphorylation of the conserved PPPSPxS motif in Wnt coreceptor LDL-receptor-related protein 6 or 5 (LRP6/5) by GSK3beta and CK1gamma, leading to the recruitment of the Axin complex to the cytoplasmic membrane. However, it has not been fully understood how the phosphorylated LRP6/5 motifs recruit and inhibit the Axin complex at the molecular level. Here we report that the phosphorylated PPPSPxS motif in LRP6 inhibits and recruits GSK3beta in the complex through a direct interaction. This observation suggests a molecular mechanism of how GSK3beta bound to Axin is specifically inhibited for Wnt/beta-catenin signaling.