

4th International Conference on
GREEN ENERGY & EXPO

&

6th International Conference on
RECYCLING: REDUCE, REUSE & RECYCLE November 06-08, 2017 | Las Vegas, USA**Utilization of green plant resource- example of herbal medicine****Yang L and Yu B Y**

China Pharmaceutical University, China

Licorice derived from the roots and rhizomes of *Glycyrrhiza uralensis* Fisch. (Fabaceae) is one of the most widely-used traditional herbal medicines in China. It has been reported to possess significant analgesic activity for treating spastic pain. The aim of this study is to investigate the spasmolytic molecular mechanism of licorice on oxytocin-induced uterine contractions and predict the relevant bioactive constituents in the aqueous extract. The aqueous extraction from licorice inhibited the amplitude and frequency of uterine contraction in a concentration-dependent manner. A morphological examination showed that myometrial smooth muscle cells of oxytocin-stimulated group were oval-shaped and arranged irregularly, while those with a single centrally located nucleus of control and licorice-treated groups were fusiform and arranged orderly. The percentage of phosphorylation of HSP27 at Ser-15 residue increased up to 50.33% at 60 min after oxytocin stimulation. Furthermore, this increase was significantly suppressed by licorice treatment at the concentration of 0.2 and 0.4 mg/mL. Co-localization between HSP27 and α -SMA was observed in the myometrial tissues, especially along the actin bundles in the oxytocin-stimulated group. On the contrary, the co-localization was no longer shown after treatment with licorice. Additionally, employing ChemGPS-NP provided support for a preliminary assignment of liquiritigenin and isoliquiritigenin as protein kinase C (PKC) inhibitors in addition to liquiritigenin, isoliquiritigenin, liquiritin and isoliquiritin as MAPK-activated protein kinase 2 (MK2) inhibitors. These assigned compounds were docked with corresponding crystal structures of respective proteins with negative and low binding energy which indicated a high affinity and tight binding capacity for the active site of the kinases. These results suggest that licorice exerts its spasmolytic effect through inhibiting the phosphorylation of HSP27 to alter the interaction between HSP27 and actin. Furthermore, our results provide support for the prediction that potential bioactive constituents from aqueous licorice extract inhibit the relevant up-stream kinases that phosphorylate HSP27.

Biography

Yang L is a last-year PhD student at China Pharmaceutical University. Her research interest is on the utilization of green plant resources, focusing on traditional Chinese medicine.

lu.yang@stu.cpu.edu.cn

Notes: