

## Abstract of Presentation

**Note: This paper should be typed in “Times New Roman” of 12pt.**

Presentation Title(Should be no more than 20 words):

Evaluation of Herbal Medicines on Gynecology Diseases Using Ovariectomized and Hypophysectomized Rats

Abstract :

The Ministry of Health, Labour and Welfare in Japan has approved herbal medicines, and Tokishakuyakusan (TS) is a one of herbal medicines in Japan. TS comprised six crude drugs (Angelicae Radix, Paeoniae Radix, Atractylodis Rhizoma, Alismatis Rhizoma, Hoelen, Cnidii Rhizoma) for treating diseases of women such as menopausal syndrome, dysmenorrhea, chill and many other disorders. However, its effectiveness and safety are not yet fully understood. This presentation reports new observations on the targets of TS, the differences between estrogen and TS, and the potential risks of TS treatment both *in vitro* and *in vivo*. Steroidogenic acute regulatory protein (StAR) and pituitary adenylate cyclase-activating polypeptide (PACAP) were targeted by TS in uterus and pituitary of ovariectomized (OVX) rats. TS had estrogenic activity, but a yeast two-hybrid assay showed that TS did not bind to estrogen receptor  $\alpha$  (ER $\alpha$ ) and ER $\beta$ , whereas 17 $\beta$ -estradiol (E2) did. However, administration of TS to OVX and hypophysectomized (HPX) rats promoted the expression of PACAP mRNA, whereas E2 did not. In addition, histological observations showed that administration of TS promoted development of ovary in HPX rat more effectively than administration of E2+progesterone. Finally, expression of ER $\alpha$  and the progesterone receptor (PR), which is used as a clinical gynecological cancer marker, was tested in the uterus of OVX rats. Administration of TS did not increase expression of ER $\alpha$  and PR, whereas E2 did. These results indicate that TS targets the expression of StAR and PACAP through different pathways than E2, and it is effective and safe for the treatment of menopausal syndrome in women.

Menoprogen (MPG), which is a herbal medicine for women in China, was also evaluated by the same technique as TS. MPG comprised four crude drugs; Lycii fructus, Rehmanniae radix, Mori fructus and Carthami flos. The experimental results suggest that MPG would be useful for treating women with menopausal syndromes.

These herbal medicines are beneficial and safe for the treatment of menopausal syndrome in women.