Minsun Yi et al., Nat Prod Chem Res 2014, 2:5
http://dx.doi.org/10.4172/2329-6836.S1.004

OMICS Group Conferences
Accelerating Scientific Discovery

2nd International Conference and Exhibition on
Pharmacognosy, Phytochemistry & Natural Products
August 25-27, 2014 DoubleTree by Hilton Beijing, China

Sesquitepene phytoestrogens isolated from hexanol extracts of *Cyperus rotundus* inhibited aromatase activity

Minsun Yi, Yongjoo Park and **Kyuhyuck Chung**
SKKU Pharmacy School, South Korea

Background: The aromatase enzyme, which converts androstenedione to estrone, is well known to regulate the availability of estrogen to support the growth of hormone-dependent breast tumors. *Cyperus rotundus* L. is a sedge in the family Cyperaceae, that grows naturally in tropical, subtropical, and temperate regions. Its rhizome, Cyperi Rhizoma, has been used as a well-known traditional herbal medicine for the treatment of dysmenorrhea, menstrual disorders, stomachache, bowel disorders, and several pains.

Aim: Only few scientific studies about use of *C. rotundus* in the breast cancer prevention have been done so far. In continuation of our search for phytoestrogen from natural products that can be used in women's postmenopausal treatment with less side-effects, we found that MeOH extract of *C. rotundus* showed potent estrogenic activity by using E-screen assay.

Methods: The MeOH extract was subjected to bioassay-guided fractionation and isolation. Six sesquiterpenes were isolated from the hexane fraction of *C. rotundus* rhizome (CRE) and each has evaluated for the estrogenic potency in E-screen assay. Also "In-Cell" aromatase activity assay was done to compare aromatase inhibitory effects of CRE compounds.

Results: The sesquiterpene compounds are supposed to act by ligand-binding to the estrogen receptors, which in turn showed anti-estrogenic effect as a result of competition with high concentration of estradiol. In the estrogen replacement therapy for post-menopausal women, these findings suggest CRE consists of phytoestrogens which also may prevent the side-effective breast cancer occurrence. Furthermore, CRE showed especially almost over 50% percent when compared to the other fractions. Among the sesquiterpenes, isocyperol and 2 other compounds showed strong aromatase inhibition in JEG-3 cells.

Conclusions: This result indicates that CRE may be beneficial in the chemoprevention of hormone-dependent breast tumors in the replacement therapy for post menopausal women.

9909joy@naver.com