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Phylogenetic relationships and genetic diversity of genus *Hypericum* using ISSR markers

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Hypericum erectum, Grassy places and thin woods in hills and mountains esst asia.The leaves and flowering tops are galactogogue. The stems are rich in tannin and are used in the treatment of arthritis, lumbago, neuralgia and rheumatis. The study of genetic diversity and population structure was carried out in the *Sorbus commixta* using ISSR (inter-simple sequence repeat) analysis to investigate the genetic variation and genetic structure of eight Korean population species. Although this species has been regarded as a medicine and economically important source. ISSR (simple sequence repeats) primers anneal directly to simple sequence repeats and thus, unlike SSR markers, no prior knowledge of target sequences is required ISSR. Also, the sequences that ISSR targets are abundant throughout the eukaryotic genome and evolve rapidly; consequently ISSR may reveal a much higher number of polymorphic fragments per primer than RAPDs.

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Differential Cross-Talk Interaction Between Estrogen Receptor and Xenobiotic Nuclear Receptors Depending on the Target Cell Types

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This study examined the effects of xenobiotic nuclear receptors, SXR, PPARγ, and CAR on the transcriptional activity of estrogen receptor in human breast cancer and CHO-S cell lines and compared with those in human hepatoma cell line. Three different breast cancer cell lines, MCF-7, MDA-MB-231, and MCF-7K3 as well as CHO-S cells were cultured and effects of different doses of SXR, PPARγ and CAR on the ER-mediated transcriptional activation of synthetic (4ERE)-tk-luciferase reporter gene were analyzed. Consistent with the previous report, CAR significantly inhibited ER-mediated transactivation and SXR repressed modestly whereas the PPARγ did not repress the ER-mediated transactivation in Hep G2 cells. However, in both cell lines of breast cancer and CHO-S neither of the xenobiotic receptors repressed the ER-mediated transactivation. Instead, they tend to increase the transactivation depending on the cell type and xenobiotic nuclear receptors. In MCF-7, PPARγ but not SXR or CAR slightly increased ER-mediated transactivation. In addition, only low dose of CAR slightly increased ER transactivation in MDA-MB-231 whereas none of the above xenobiotic receptors influenced ER transactivation in both MCF-7K3 and CHO-S cells. These results indicate that the effects of cross-talk between estrogen receptor and the xenobiotic nuclear receptors, CAR, SXR, PPARγ, are different in breast cancer cells and CHO-S cells from HepG2. In conclusion, the transcriptional regulation by estrogen in ER-mediated transactivation may involve different cross-talk interaction between estrogen receptor and xenobiotic nuclear receptors depending on the estrogen target cell types.