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Estrogenic effects of flavonoid components in Xiaoyao powder

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ABSTRACT. The objective of this study was to evaluate the estrogenic effects and mechanisms of three flavonoid components in Xiaoyao powder: quercetin, kaempferol, and isorhamnetin. The drugs were used to treat estrogen receptor (ER)-positive human breast cancer MCF-7 cells, and proliferation was measured using the MTT method. The expression of proteins and mRNA of the ER subtype were measured using western blotting and real time polymerase chain reaction. The quercetin (10^{-2} μM, 10^{-3} μM), kaempferol (100 μM, 10^{-2} μM), and isorhamnetin (10^{-3} μM) promoted the proliferation of MCF-7 cells, and the expression of ERα and ERβ proteins and mRNA were all increased significantly ($P < 0.05$). These effects were reversed by treatment with 0.1 μM estrogen antagonist ICI182780. Three flavonoid components in Xiaoyao powder increased the expression of proteins and mRNA of ERα and ERβ and promoted the proliferation of MCF-7 cells. These estrogenic effects were mediated by the ER.

Key words: Plant estrogenic; MCF-7 cells; Xiaoyao powder; Estrogenic receptor; Flavonoid

