During stable OA therapy, FX activity could be a good marker of FI1 oscillations. In these subjects, the FII:C/FX:C ratio was significantly higher when the mutation FII20210A existed (2.54 vs 2.01; P<0.0001), but disappointing results were obtained when we attempted to use it for a diagnostic purpose.

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References
preventive and anticarcinogenic agents, as well as antiatherogenic and antioxidant compounds (1). Although the public now consumes these compounds in substantial amounts from dietary sources, food supplements, and more recently, as “nutraceutical” tablets, their actual mode of action is not fully defined. The most compelling hypotheses correlate the biological action of flavonoids to their ability to mimic natural estrogens (2, 3) such as estradiol, or to act as antioxidants (4). Indeed, genistein, a natural soy isoflavone, is among the most potent known phytoestrogens. The ability of flavonoids to act as androgen mimics or antiandrogens has attracted much less attention. Recently, we showed that apigenin, a natural flavone found in chamomile, olive leaves, and other plant sources, has potent progestational activity (5).

We have examined the possible antiandrogenic activity of genistein using the steroid hormone receptor-positive breast cancer cell line BT-474. This cell line, when stimulated by dihydrotestosterone (DHT), produces prostate-specific antigen (PSA), which is then secreted into the tissue culture supernatant and can be measured quantitatively by immunnoassay. Details of this system are given elsewhere (5). To study the antiandrogenic activity, the cells were first exposed to the putative antiandrogen (10⁻⁵ to 10⁻⁸ mol/L) for 1 h and then stimulated with DHT (10⁻⁹ mol/L). Controls with only antiandrogen or only DHT were included in all experiments. Nilutamide was used as a control antiandrogen. Our data (Fig. 1) clearly demonstrate the potent antiandrogenic activity of genistein, which is dose-dependent and is detectable down to 10⁻⁷ mol/L. Quercetin and several other flavonoids tested were devoid of such activity (data not shown).

These data clearly demonstrate for the first time that genistein exhibits potent antiandrogenic activity in addition to its well-established estrogenic activity. Indeed, the therapeutic potential of this compound in prostate cancer patients may be related to its combined estrogenic and antiandrogenic properties. It will be interesting to examine large numbers of natural compounds for antiandrogenic activity, which may qualify them as candidate therapeutic and preventive agents for prostate, breast, and possibly other hormonally dependent cancers.

References


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