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## Alexander V Sirotkin

Constantine the Philosopher University and Research Institute of Animal Production, Slovakia

### Plant molecules affecting female reproductive functions

The aim of our *in vitro* and *in vivo* studies was to examine the potential influence of some medical and food plants and their constituents on ovarian functions and their potential usefulness as pharmacological stimulators of fecundity and protectors against the influence of environmental contaminants. For this purpose, we have study the influence of green tea, rooibos, ginkgo, flaxseed, yucca extracts, as well as of plant molecules resveratrol, curcumin, quercetin, daidzein, diosgenin on proliferation, apoptosis, release of hormones and response to gonadotropins of murine, porcine and rabbit ovarian cells as well as on rabbit fecundity. It was observed, that green tea, rooibos, ginkgo, flaxseed, yucca extracts, as well as of resveratrol, curcumin, quercetin, daidzein, diosgenin can suppress proliferation, promote apoptosis, to alter the release of steroid hormones and to inhibit the response of cultured ovarian cells to hormonal stimulators FSH and IGF-I. On the other hand, some of these plants could prevent the action of environmental contaminants benzene, xylene and toluene on ovarian cells. Yucca extract expressed an opposite effect. Furthermore, feeding of rabbits with yucca and curcumin increased their fecundity. These observations suggest potential direct inhibitory influence of food and medical plants green tea, rooibos, ginkgo, flaxseed on ovarian functions. The similarity in plant and plant constituents effects suggest that the observed plant effects can be due to presence of curcumin, quercetin, daidzein and diosgenin. The potential anti-reproductive effect of these plants should be considered by their consumption. On the other hand, some plants or plant molecules could be used as stimulators of reproduction and fecundity and protectors against the influence of environmental contaminants.

### Biography

Alexander V Sirotkin completed PhD, DrSc. He is currently working as a Professor at the Constantine the Philosopher University, as a Research Scientist at Research Institute of Animal Production in Nitra and as a Visiting Professor at the King Saud University in Riyadh. He has about 600 publications including 120 full papers in the international journals. He is a member of editorial boards of 4 international journals and a recipient of more than 10 national and international awards.

asirotkin@ukf.sk

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