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Stimulation of granulosa cells via non-thermal plasma and natural products MILAD RASOULI, NADIA FALLAH, OMOL BANIN PAKTINAT, ELAHEH AMINI, Kharazmi University — Steroidogenesis is a process which cholesterol is converted to biologically active steroid hormones. The role of steroid hormones from fetal life to adulthood regulate by a wide variety of developmental and physiological processes. Qualitative regulation determining the type of steroid to be produced is mediated by many enzymes and cofactors. Steroidogenic enzymes fall into two groups: cytochrome P45 (CYP) or HSD enzymes and hydroxysteroid dehydrogenases. Granulosa cells are responsible for estrogens synthesis and essential for the development and survival of oocyte. Non-thermal plasma is a cocktail of chemical and physical factors such as short-lived reactive species, long-lived reactive species, electromagnetic field, and ultraviolet radiation. Recently, plasma has attracted attention in various fields of medicine. Here, we examine for the first time the efficiency of plasma, *Crocus sativus* L., and Date palm pollen (DPP) on Granulosa cells which are important and necessary for ovarian steroidogenesis. Based on our observation, we expect plasma acts as a steroidogenesis inducer agent.

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