

## عنوان مقاله:

Optimized Primary Culture and Subculture of Granulosa Cells

## محل انتشار:

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## خلاصه مقاله:

Background: Primordial follicle includes an oocyte surrounded by a layer of somatic cells called Granulosa Cells (GCs). GCs, also known as nurse cells, are an important protective element for the growth and survival of oocytes. Oocytes, which lack some of the metabolic processes, require granulosa cells for their development. Objectives: This manuscript was provided to explain the protocol of GCs primary culture extracted from NMRI mice ovaries. Methods: For choosing the optimum protocol, we used two methods with different culture mediums to obtain more GCs and expedite the process. Hematoxylin and Eosin (H&E) staining and flow cytometry were used to analyze the type of extracted cells from ovaries. Besides, we evaluated the effect of crocin and DPP as two common natural products in Iran on the proliferation of these cells via MTT assay. Results: Second protocol method and alpha-MEM culture medium were chosen based on the results. Our findings from HE staining and flow cytometry proved the percentage of cultured GCs in the flask. Further, MTT assessment demonstrated that crocin at high doses had a toxic effect on granulosa cells, whereas date palm pollen (DPP) stimulated them to proliferation. Conclusion: Modifying this protocol is for the improvement of proliferation, coherence, and quality of GCs in primary culture and subculture. Regarding the effect of these two natural products on granulosa cells, we can mention the bilateral effect of crocin and DPP enhancement in proliferation.

## کلمات کلیدی:

Cell culture techniques, Crocin, Date palm, Granulosa cells, Oocytes

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