Data showed statistically significant induction and reduction of Oct3/4 and GATA-4 in granulosa cells, respectively (n=3); One-way ANOVA with Tukey post hoc test *p<0.05; **p<0.01 and ***p<0.001).

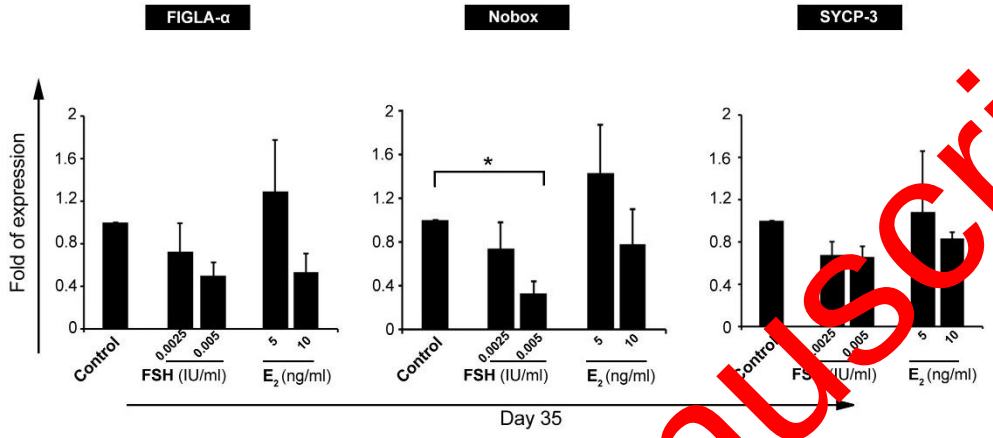

Figure 3. Real-time PCR analysis of oocyte- related genes, FIGLA-α, Nobox, and SYCP-3, in granulosa cells after exposure to follicle-stimulating hormone (FSH) and estradiol (E_2) (n=3). Gene expression analysis confirmed the significant reduction of Nobox gene in granulosa cells after treatment with FSH. These data showed the potency of FSH in inhibition granulosa cell differentiation toward oocyte-like cells.

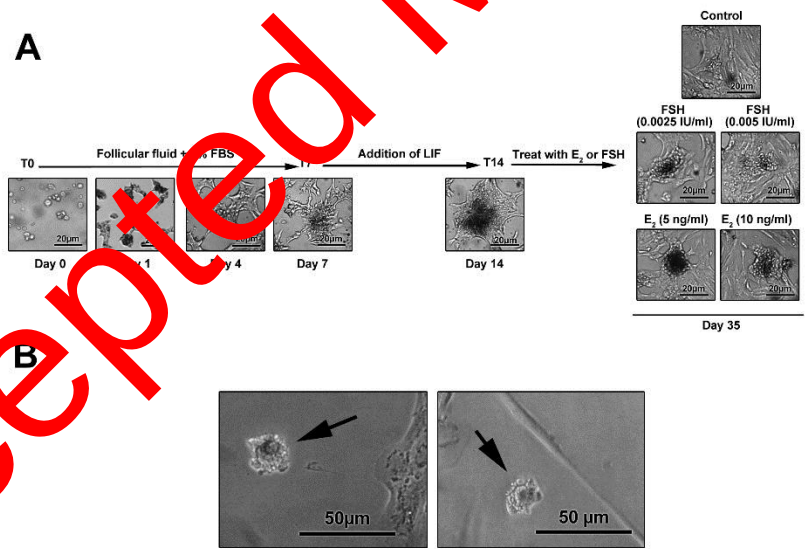

Figure 4. The morphological adaptation of granulosa cells cultured in different media supplemented with leukemia inhibitory factor (LIF), estradiol (E_2), and follicle-stimulating hormone (FSH) after 35 days. Cell morphology in E_2-treated cells (**B**). After the completion of the experimental protocol, cells lose epithelial-like appearance and acquire a round shape. The cell spreading and flattening are confined and the extent of projection decreased following treatment with LIF and E_2. It seems that the up-regulation of oocyte-like genes, such as Nobox, in granulosa cells coincides with prominent morphological adaptation.