

Up-regulation of the G3PDH "housekeeping" gene by estrogen

Waleed ElBeialy

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Proteomic and genomic studies commonly involve the assessment of mRNA levels using reverse transcription-polymerase chain reaction (PCR) and real-time quantitative PCR. An internal standard RNA is fundamentally analyzed along with the investigated mRNA to document the specificity of the effect(s) on mRNA and to correct for inter-sample variations. In our studies implementing estrogen treatments on different cell lines, we initially used glyceraldehyde-3-phosphate dehydrogenase (G3PDH) as an internal standard. However, the results of PCR amplification demonstrated that 17 β -estradiol enhanced the expression of the G3PDH gene, rendering it impossible to use G3PDH as an unbiased comparative control.

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