Fig. 4 — Real time RT-PCR plots for estrogen receptor relative expression levels on the cells of ovarian cancer after treating compound **1**. 5-Fu and the solvent were employed as the positive and negative control

compound could remarkably decrease the cells viability of ovarian cancer. Simultaneously, the solution exhibited that there is no bio-activity on the cell viability of ovarian cancer. After finishing this study, it can be observed that the bio-activity of compound **1** was much superior than 5-Fu, a positive drug, which indicating the superb application prospects on treating ovarian cancer.

Inhibition of estrogen receptor expression on the ovarian cancer cells

In the previous work, we have confirmed that compound **1** could remarkably decrease the cells viability of ovarian cancer, which is much superior than 5-Fu. Except for this, the estrogen receptor exerts a principal effect in ovarian cancer cells proliferation together with their apoptosis, hence, on the cells of ovarian cancer, the estrogen receptor relative expression was also measured via employing real time RT-PCR detection. According to Fig. 4, there exists an evidently enhanced estrogen receptor expression on the cells of ovarian cancer, which is different from control group. Between the above two groups, there exist an evidently difference, where P is less than 0.005. After treating through compound **1**, the degrees of the estrogen receptor on cells of ovarian cancer were declined in a dose dependent fashion. The solution suggested that there is no bio-activity on the cell viability of ovarian cancer. From the plots, it can be observed that the bio-activity of compound **1** is much superior than 5-Fu.

Conclusion

In conclusion, we have synthesized a coordination polymer compound **1** with the reaction between $GdCl_3 \cdot 6H_2O$ and H_6TATAT. The architectural analysis demonstrated that compound **1** is constructed from the binuclear building blocks of $[Gd_2(COO)_{12}(\mu_2\text{-}O)]$ linked through the triazine hexacarboxylic framework, which displayed a fascinating 3-dimensional microporous architecture. The detection of CCK-8 indicated that our compound could remarkably decrease the cells viability of ovarian cancer. Except for this, the estrogen receptor levels on the cells of ovarian cancer were down-regulated by the dose dependent fashion, which is superior than 5-Fu. Eventually, it can be concluded that our compound could be a superior candidate for treating the ovarian cancer with the decrease of estrogen receptor on the cells of ovarian cancer.

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