Effect of 30K Protein and Its Gene on Productivity and Glycosylation of Human FSH in CHO Cells

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In our previous study, it has been shown that silkworm hemolymph (SH) and its major apoptosis-inhibiting component, '30K protein' inhibited apoptosis in various cell systems[1,2]. In this study, recombinant 30Kc19, one of the 30K proteins, was produced in *E.coli* ,and purified. Medium was supplemented with the recombinant 30Kc19 protein for the cultivation of CHO cells culture producing human follicle stimulating hormone (hFSH). O increase the productivity of FSH, cells were also transfected with *30k genes,* which include *30kc6* and *30kc19.* FSH is a pituitary glycoprotein that is used clinically for in vitro fertilization and treatment of anovulatory women[3]. Cells were cultured by two-phase culture consisting of growth phase in serum-containing medium and production phase in serum-free medium with or without sodium butyrate. The addition of recombinant 30Kc19 protein to the culture medium inhibited serum deprivation/sodium butyrate-induced cell death leading to the increase of FSH productivity. And recombinant 30Kc19 protein promoted the terminal sialylation of glycans of FSH as shown by a decreased p*I* range. Also the expression of 30K protein inhibited cell death and promoted the terminal sialyation of glycans of FSH. Therefore recombinant 30K protein and its gene will be used to enhance the industrial recombinant proteins production in CHO cells.

References

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