We have studied the effect of glucose deprivation on the expression of genes encoding for ubiquitin specific peptidases — USP and autophagy related 7 ATG7 in U87 glioma cells in relation to inhibition of inositol requiring enzyme-1 (IRE1). It was shown that glucose deprivation was downregulated the expression of USP1 and USP10 genes and up-regulated USP4 and USP25 genes in control (transfected by empty vector) glioma cells. At the same time, the expression
level of 
USP14, USP22 
and ATG7 genes in these cells did not significantly change upon glucose deprivation condition. Inhibition of IRE1 signaling enzyme function in U87 glioma cells modified effect of glucose deprivation on the expression of most studied genes. Therefore, glucose deprivation affected the expression level of most ubiquitin specific peptidases genes in relation to the functional activity of IRE1 enzyme, which controls cell proliferation and tumor growth as a central mediator of endoplasmic reticulum stress.

Ключові слова: mRNA expression, USP genes, IRE1 inhibition, glucose deprivation, U87 glioma cells.

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