

***O*-GlcNAc modification is involved in final differentiation of myoblast C2C12.**

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β-*O*-linked N-acetylglucosamine(*O*-GlcNAc) is dynamic post-translational modification in nucleus and cytosol. Transcription factors, cytoskeletal proteins and variable enzymes are modified with *O*-GlcNAc at their Ser/Thr residues and their functions are regulated by *O*-GlcNAc. It is reported that this modification has an important role on differentiation of various cell types involving epithelial cells. Thus, we studied how *O*-GlcNAc modification is involved in differentiation using myoblast C2C12 cell lines. Myoblast C2C12 is finally differentiated to myotube in differentiation media for 5 days. We confirmed dynamic changes of total *O*-GlcNAc modification levels during myogenesis. Especially, total *O*-GlcNAc modification is decreased gradually during first 12 hours after induction of myogenesis. Also, we identified that the increment of total *O*-GlcNAc modification by the treatments of STZ, specific *O*-GlcNAcase inhibitors, and the addition of glucose inhibited final differentiation of myoblast C2C12. From these results, we could conclude that *O*-GlcNAc modification might be involved in final differentiation of myoblast at early time period.