Optimization of the expression of modified glycogen and matrix M proteins in Porcine Reproductive and Respiratory Syndrome (PRRS)

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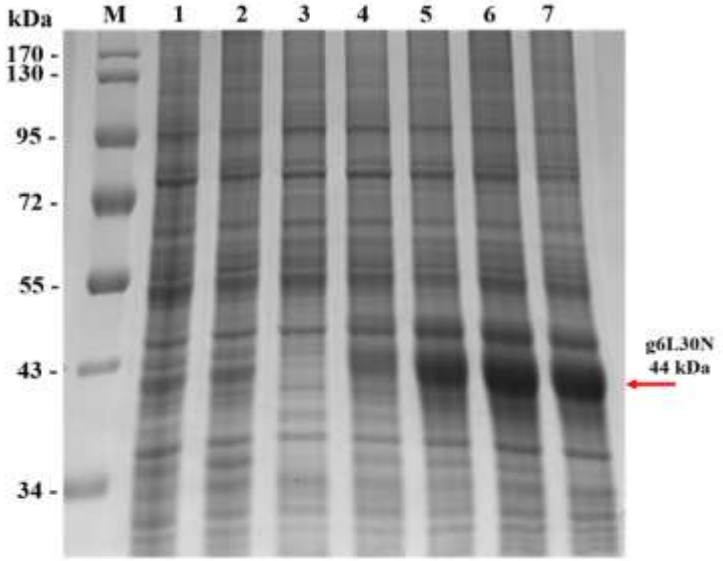
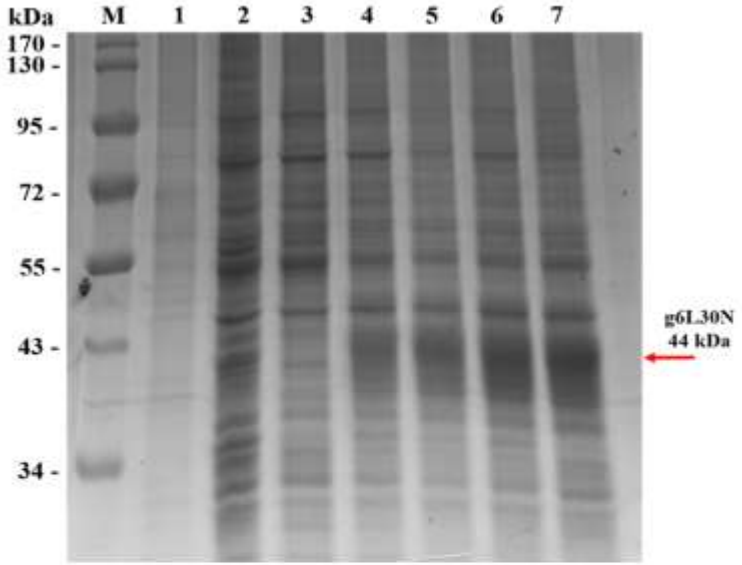
Porcine Reproductive and Respiratory Syndrome (PRRS) is a disease in pigs that results from infection with PRRS virus. Infected pregnant sows having premature births or abortion in late pregnancy and serious cases may even be fatal. Such factors may bring huge economic losses to pig breeding businesses and it is therefore necessary to develop PRRS virus vaccine. The glycoprotein GP5 and non-glycosylated matrix protein M in the PRRS virus is important structural protein which generate host-specific neutralizing antibody and can be used for vaccine development. In this experiment, the GP5 and M protein gene sequences were modified and ligated into the expression vector to produce baculovirus that was infected into insect cells. The recombinant protein was then expressed with optimal time course conditions and recombinant baculovirus concentrations. The results showed that the molecular weight of the recombinant protein was 44 kDa by SDS-PAGE and Western Blot analysis. The protein expression level was significant on the fifth day after infection with 30μL of the recombinant virus. Such developments can have the potential to be evaluated as vaccines in the future.

(2A)



(2B)



(2C)

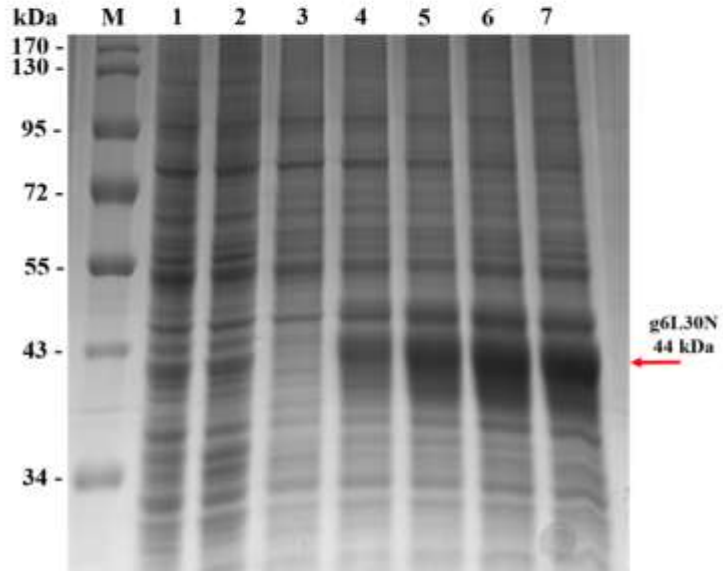


Fig. 2. SDS-PAGE analysis of g6L30N protein expression at different time course after virus infection. Total proteins were extracted from Hi-5 cells infected with (A)10μL (B)20μL and (C)30μL of BV-g6L30N. Lane M: protein marker. Lane 1: crude cell extract from Hi-5 cells infected by virus with empty vector; Lane 2: crude cell extract from Hi-5 cells infected by virus with unmodified gene; Lane 3 to Lane 7 were extracted from Hi-5 cells infected by BV-g6L30N at different time course (Day1. Day2. Day3. Day4. Day5).