OPTIMIZATION OF RABIES VIRUS GLYCOPROTEIN EXPRESSION IN DROSOPHILA S2 CELLS USING HEMOLYMPH FROM *LONOMIA OBLIQUA*

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Protein expression systems have been intensely used for the production of recombinant proteins. However, low expression amounts have limited the industrial production of some proteins of interest. In this study, the benefits of cell culture supplementation with hemolymph from *Lonomia obliqua* were investigated and the effect on recombinant rabies virus glycoprotein (GPV) production and on S2AcGPV2 cell growth were evaluated. Hemolymph was fractionated by gel filtration and ionic exchange chromatographies, fractions were identified by SDS-PAGE and the effects were characterized in cultures of S2 cells transfected with the GPV gene. All experiments were carried out in 100 mL shake flasks (working volume: 20 mL). The cultures were performed in an orbital shaker at 100 rpm and 28 ºC. To analyze the GPV expression, immunofluorescence and flow cytometry assays were performed to measure the % of cells expressing the GPV. The GPV concentration in the S2AcGPV cell cultures was estimated by ELISA. The analyses of the GPV expression had shown the presence of a potent protein in *Lonomia obliqua* hemolymph. The results obtained demonstrated that the addition of 1% of *Lonomia obliqua* hemolymph increased the GPV synthesis up to 80% and the S2AcGPV2 cell growth up to 30% when compared to controls with TC-100 medium with 10% of FBS.

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