Cloning and Expression of Soluble XAC1201 Protein of *Xanthomonas citri* subsp. *citri* Involved in Citrus Canker Pathogenesis

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**Introduction**: Citrus canker is a worldwide concerning disease caused by the bacteria *Xanthomonas citri* subsp. *citri*. Interruption of the ORF XAC1201 by random transposon insertion produced a mutant with an altered pathogenicity. XAC1201 product is a hypothetical protein that has a phosphohydrolase domain. Thereby, this work aimed to clone XAC1201 gene and express its encoded protein in *E. coli* as an initial step for obtaining its functional characterization, an important step in order to elucidate its role in citrus canker. **Material and Methods**: The XAC1201 gene was cloned by PCR using a pair of specific primers. The amplified fragment was cloned into pET SUMO TA expression vector and the construct was used to transform *E. coli* DH10B cells. After confirmation of the identity and orientation by sequencing, the correct construct was used to transform *E. coli* BL21 (DE3) pLysS cells. The expression of recombinant protein was performed in LB medium at four different temperatures (16 °C, 20 °C, 28 °C and 37 °C) and three IPTG concentrations (0.1, 0.2 and 0.4 mM). Samples were collected at 2, 4 and 8 hours at 16 and 28 °C; 2, 16 and 24 hours at 20 °C; and 2, 3 and 4 hours at 37 °C and analyzed by SDS-PAGE. **Results and Discussion**: The conditions where the protein was expressed in large amount in a soluble form was at 0.2 mM IPTG concentration at 20, 28 and 37 °C, decreasing at 0.4 mM IPTG concentration. Higher amounts of soluble protein were observed at 28 and 20 °C in the latest hours of induction, 8 and 24 hours respectively. The worst condition was at 16 °C, with almost no protein being expressed. **Conclusions**: The results showed that this protein can be produced in high amount and soluble form for further biochemical and functional characterization.

Key words: protein expression; recombinant protein; solubility test.

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