EFFECT OF SUBLETHAL CONCENTRATION OF STREPTOMYCIN IN XYLELLA FASTIDIOSA

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Xylella fastidiosa (*Xf*) is a phytopathogenic bacterium that causes economically important diseases in several plant species, such as Citrus Variegated Chlorosis (CVC) in orange trees and Pierce Disease (PD) in grapevines. Using DNA microarrays representing 91,5% of all coding sequences (CDS) of *Xf* CVC-strain 9a5c we are investigating the effects of sublethal doses of streptomycin on its gene expression profile. For this, cells were incubated with 1µg/mL of streptomycin for 15, 30, 60 minutes in PW medium. At time 0h, 1734 CDS were counted as expressed. After streptomycin treatment, the total number of CDS expressed was strongly reduced and we have detected 37 CDS differentially expressed. Among those CDS, 30 were up-regulated and 7 were down-regulated, including several genes encoding conserved hypothetical and hypothetical proteins. Interestingly, streptomycin treatment induced expression of 2 CDS related to protein folding processes, XF0615 (GroEL) and XF0616 (GroES), 2 CDS related to protein synthesis, XF2438 (30s ribosomal protein S1) and XF2628 (Elongation factor Tu), and the CDS XF1827 (organic hydroperoxide resistance protein). Differential expression for a subset of these CDS was validated by RT-qPCR. In conclusion, our results showed that exposure to sublethal doses of streptomycin elicits changes in *Xf* gene expression unraveling candidates that might be involved with specific mechanisms of streptomycin action.

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