

SERINE/THREONINE PHOSPHATASES IN THE SOCIAL AMOEBAE *DICTYOSTELIUM DISCOIDEUM*: ANNOTATION AND EXPRESSION ANALYSIS OF CATALYTIC AND REGULATORY SUBUNITS

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Protein serine/threonine phosphatases function in most cases as hetero-oligomeric complexes where one catalytic subunit interacts with one or more regulatory subunits. Based on the amino acid sequence from their catalytic subunits, PSTPs are grouped in two families: PPP and PPM. The first includes PP1, PP2A, PP2B, PP5, PP6 and PP7, while PP2C belongs to PPM family. We identified at least 15 genes encoding catalytic subunits of PSTP family and several genes encoding potential regulatory subunits in *Dictyostelium* genome. Two hybrid screenings also revealed potential candidates to interact with DdPP1c or DdPP4c. To survey PSTPs function we are investigating the expression levels of some PSTP-related genes under different conditions during *Dictyostelium* growth and development. PP1c, PP4c, PP5c and PP6c genes are expressed throughout *Dictyostelium* life cycle. Interestingly, we detected, by RT-qPCR, an increase in transcript levels of PP4c and PP6c upon exposure of growing cells to heat shock. This treatment also up-regulates expression of some PP1c regulatory subunits such as the inhibitors I-2 (DdI-2) and Ypi1 (DdI-3). Transcripts encoding PP4c interacting proteins such as alpha-4 also had their levels increased in response to heat shock. Our observations suggest that these genes might participate in stress response in *D. discoideum*. Supported by FAPESP and CNPq.

Key words: serine/threonine phosphatases, RT-qPCR, heat shock