Stimulation of *Leishmania tropica* Protein Kinase CK2 Activities by Platelet-Activating Factor (PAF)

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Leishmania tropica is one of the causative agents of cutaneous leishmaniasis. Platelet-activating factor (PAF) is a phospholipid mediator in diverse biological and pathophysiological processes. Protein kinase CK2 is a ubiquitous and constitutively activated protein kinase that phosphorylates Ser/Thr residues on its targets and is involved in a wide array of cellular process. This enzyme is known to be engaged with developmentally regulated processes, such as the regulation of cell cycle and differentiation.

Here we show that PAF promoted a three-fold increase on ecto-protein kinase and a two-fold increase on the secreted kinase activities of *L. tropica* live promastigotes. When dephosphorylated casein was added to the interaction medium, along with PAF, there was a five-fold increase on the ecto-kinase and a three fold increase on the secreted kinase activities. The CK2 activities were also stimulated by PAF and casein. A protein released from *L. tropica* reacted with polyclonal antibodies for the mammalian CK2 alfa catalytic subunit. Furthermore, in vitro mouse macrophage infection by *L. tropica* was doubled when promastigotes were grown for five days in the presence of PAF. Similar results were obtained when the interaction was performed in the presence of purified CK2 or casein. TBB and DRB, CK2 inhibitors, reversed PAF enhancement of macrophage infection by *L. tropica*. WEB 2086, a competitive PAF antagonist, reversed all PAF effects here described. These results are the first demonstration of a molecule able to modulate both membrane-bound and secreted casein kinase activities.

Keywords: *Leishmania*, macrophage, PAF, protein kinase CK2, interaction, signal transduction.

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