

ECTO-NUCLEOSIDE TRIPHOSPHATE DIPHOSPHOHYDROLASES IN
PROTOZOA PARASITES: LOOKING FOR A FUNCTION.

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The plasma membrane of cells contains enzymes whose active sites face the external medium rather than cytoplasm. The activities of these enzymes, referred to as ecto-enzymes, can be measured using living cells. Cell membrane ecto-nucleoside triphosphate diphosphohydrolases (ecto-NTPDases) are integral membrane glycoproteins that are millimolar divalent cation-dependent, low specificity enzymes that hydrolyze extracellular nucleoside tri- and / or diphosphate. Their physiological role is still unknown. However, several hypotheses have been suggested such as (i) protection from cytolytic effects of extracellular ATP, (ii) regulation of ecto-kinase substrate concentration, (iii) termination of purinergic signaling, (iv) participation in the salvage of purines from extracellular medium, (v) involvement in signal transduction and (vi) involvement in cellular adhesion, virulence and infection. Here, using kinetic experiments, Western blotting, Flow cytometry, and immunoelectron microscopy analysis we present some evidences showing that in protozoa parasites these enzymes contribute to adenosine generation and to adhesion to host cells.

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Key words: ecto-ATPase, adenosine acquisition and virulence.