



Anthrax toxin receptors: roles in infectious and genetic diseases

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The anthrax toxin receptor (ATR) family comprises 3 type I membrane proteins. Their exact physiological role is far from understood but involves communication with the extracellular matrix surrounding cells.

It was recently shown that mutations in one of the anthrax toxin receptor, called CMG2, leads to a severe, fortunately rare, human genetic disease, the Hyaline Fibromatosis syndrome. The best understood role of these proteins is that of escorting the anthrax toxin to the cytosol of the target cells, where it exerts its toxic activity. The seminar will be divided in two parts.

The current understanding of the folding and structure of the ATRs will be presented. We have recently shown that about half of the 33 identified Hyaline Fibromatosis mutation map to the extracellular part of the proteins and are responsible for folding effects that arrest the protein in the biosynthetic pathway of the cell, preventing them from reaching the surface thus leading to a loss of function phenotype.

In the second part of the talk, the molecular mechanisms by which the toxin orchestrates its own uptake into the cells, by triggering successive post-translational modifications of the cytosolic tail of the receptors, will be described. In particular, the ability of the toxin to affect the interaction of the receptor with the actin cytoskeleton will be address, a property that is likely to be relevant for the physiological role of these receptors in mediating communication with the extracellular matrix.

Conférence présentée le

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Auditoire P.F. Tingry – A150
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La conférence est publique

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