

## Mechanisms of Cross-Presentation

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Cross presentation of exogenous antigens to CD8<sup>+</sup> T cells by dendritic cells generally requires their entry into the cytosol. The mechanism by which such antigens gain access to the cytosol has been a subject of intense interest. I will present data arguing that soluble and phagocytosed extracellular antigens access the cytosol using molecular components required for endoplasmic reticulum (ER)-associated degradation (ERAD). Exogenous *Pseudomonas aeruginosa* Exotoxin A, which inhibits protein translocation from the ER to the cytosol, abrogates cross presentation. In an *in vitro* model of retrotranslocation, the AAA ATPase p97, a key component in ERAD that is proposed to be responsible for the extraction of proteins into the cytosol from the retrotranslocon, was the only cytosolic cofactor required for protein export from isolated phagosomes. Functional p97 was also required for cross presentation but not conventional presentation of a protein antigen. Cross presentation appears to result from an adaptation of the retrotranslocation mechanisms involved in the degradation of misfolded ER proteins.

### References:

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