

Identification of Viral Glycoproteins as Functionally Important Antigens

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T-cells provide protective immunity against EBV. CD4+ T-helper cells are a subgroup of T-cells, that make a major contribution to orchestrating the body's immune response. Scientists from the GSF Institute of Clinical Molecular Biology, in collaboration with the Clinical Co-operation Group Paediatric Tumour Immunology, have shown that T-helper cells specific for glycoproteins of the virus coat can directly destroy B-cells transformed by EBV. When B-cells are infected, virus coat proteins are left behind on the cell surface. Thus coat protein specific T-helper cells can recognise and destroy cells infected with EBV

before virus replication takes place or a latent infection is established.

These results establish the existence of a new role for glycoprotein specific T-helper cells in the control of EBV infection which is very significant for the future development of immunisation strategies.

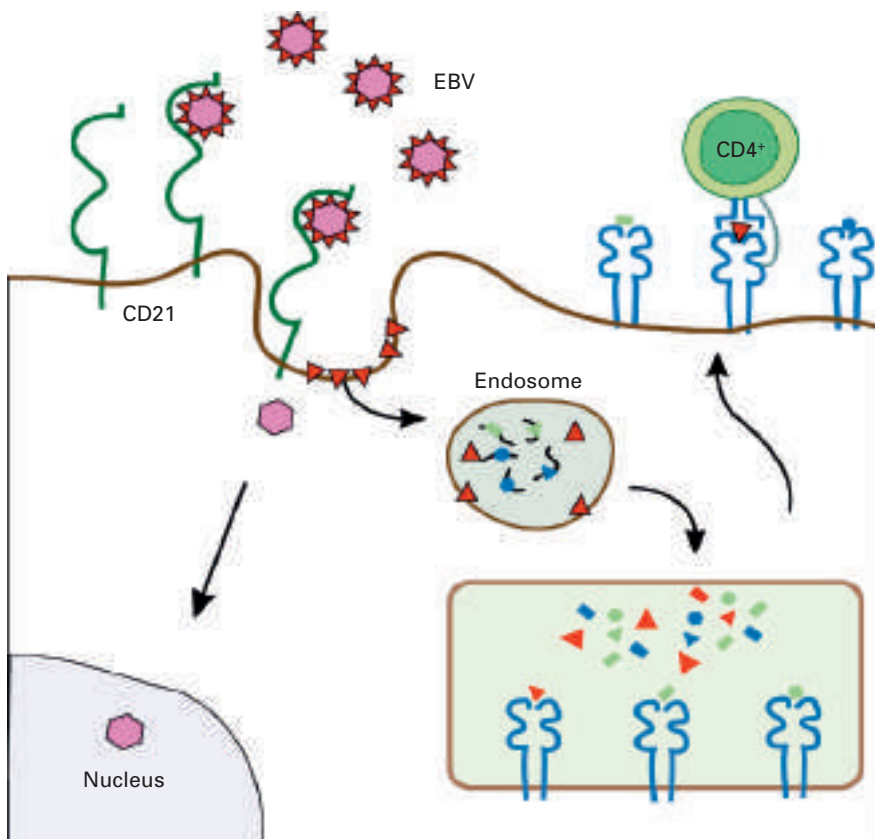
The identification of viral glycoproteins as functionally significant antigens in the development of an immune response could also be important for the prevention and therapy of other infections elicited by coated viruses.



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Literature:

- Adhikary, D. et al.:
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Recognition of EBV-infected B-cells by glycoprotein-specific T-helper cells.

During the infection of B cells, proteins of the viral envelope are retained at the cells surface and subsequently cleaved into peptides in endosomes/lysosomes. These peptides are presented on the cell surface by MHC class II molecules for recognition by glycoprotein-specific CD4+ T-helper cells. Glycoprotein-specific T-helper cells control the spreading of virus infection by lysing EBV-infected cells before the virus is able to replicate in the infected cell.