Retrovirology

Poster presentation

P02-01. Elicitation of a humoral immune response towards non-immunogenic peptides using the transcriptional transactivator of HIV-1

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Background

We previously showed that the transcriptional transactivator (Tat) of human immunodeficiency virus possesses the unusual ability to raise a humoral immune response in the absence of adjuvant. These observations prompted us to examine whether such a property can be used to raise an immune response against non-immunogenic peptides.

Methods

As we previously observed that the autoadjuvant property is controlled by a determinant located within the core- and cysteine-rich regions of the protein, we synthesized a Tat peptide (pTat) overlapping these two regions and investigated whether it can provide immunogenic properties to two peptides originating from diphtheria toxin (pDT) and from toxin alpha (pT). These two peptides that both contain a helper T-cell epitope but are nonetheless non-immunogenic in BALB/c mice were chemically synthesized in a free form or covalently associated with pTat. Then, to assess the ability to raise a humoral immune response, six groups of BALB/c mice were injected twice at two weeks interval with pTatpT, pTatpDT, pT, pDT, pT + pTat and pT + pTat, respectively.

Results

The animals were bled 14 and 28 days after the second immunisation and the sera were incubated in 96 wells microtiter ELISA plates previously coated with either pT or pDT, in order to determine the anti-pT and anti-pDT antibody response. Significant antibody titers were measured in the sera from mice immunised with either pTatpT or pTatpDT, while no titers were found in the sera from animals immunised with either pDT or pT in the presence or absence of pTat.

Conclusion

Our results indicate that a humoral immune response can be raised towards non-immunogenic peptides using a peptide overlapping the determinant involved in the autoadjuvant property of Tat and that the phenomenon requires its covalent coupling to the peptide antigen.