

Immunogenic synthetic peptides: candidates for HTLV test of point of care development

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Introduction:

Reactivity to some proteins encoded by the HTLV gag (p24 and p19) and env (gp21 and gp46) gene play a fundamental role in the primary cellular immune response. Resulting in the recurrent use of this combination of proteins in different serological tests, currently used for the diagnosis. In this way, the development a small panel of synthetic peptides proved to be the first step towards the development of "point of care" technologies, important method for epidemiology studies.

Objective:

The aim of this study was to identify synthetic peptides for HTLV-1/2.

Methods:

A total of 211 plasma samples with their Western Blot results were obtained from the IIER in Sao Paulo, Brazil, was analyzed to compare the immunogenicity of response to HTLV-1/2 proteins. Later, complete sequences of these proteins were matched for localize the conserved regions of HTLV-1/2 using BLAST platform. All peptides were initially evaluated by a screening performed by the ELISA methodology.

Results:

A total of ten peptides for HTLV-1, three for HTLV-2 and two for HTLV-1/2, were developed, comprising different immunogenic regions of 14 amino acids of these viruses. The ELISA testes showed that two peptides of env region for HTLV-1 was immunogenic. The peptides was tested in a group of 120 HTLV-1-positive plasma samples and 35 negative controls samples, demonstrating that peptide 1 presented 32% of sensitivity and 97% of specificity, on the other hand, the peptide 2 had 40% of sensitivity and 97% of specificity.

Conclusion:

Although the sensitivity of the peptides did not present high parameters, the cut-off values could be increased to improve the specificity. To improve the sensibility of this test, more than one peptide could be used in this reaction. Others experiments using these peptides, could be performed to develop the standard of test point of care for HTLV diagnosis.

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Disclosure of Interest Statement:

All the authors declare no conflict of interest.