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MEETING ABSTRACT Open Access

# Successful development of novel monoclonal antibodies against HTLV-1 bZIP factor and their applications in studying the pathogenesis of HAM/TSP

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## Background

A recent report has indicated that transgenic expression of HTLV-1 bZIP factor (HBZ) in CD4+ T cells induced T-cell lymphomas and systemic inflammation in mice. However, there is limited information on in vivo expression of HBZ in HTLV-1 infected individuals especially HAM/TSP.

## Methods

We have generated rat and human monoclonal antibodies against HBZ by hybridoma methodology and a phage display system, and developed the ELISA system for the detection of HBZ protein and anti-HBZ antibodies. Using these reagents, we analyzed the expression of HBZ protein in plasma and peripheral blood mononuclear cells (PBMCs) of HTLV-1 infected individuals as well as HTLV-1 infected cell lines. Then the results were compared with the real time PCR data.

## Results

Although we successfully detected HBZ protein in an enforced overexpressed cells and HTLV-1 infected cell lines by flow cytometry, ELISA, immunofluorescence and immunoblotting, we could not detect HBZ protein or anti-HBZ antibodies in HAM/TSP patients and asymptomatic carrires (ACs) by our system. In contrast, HBZ mRNA was significantly elevated in HAM/TSP patients than ACs. Especially, rapidly progressive HAM/TSP patients showed extremely high expression of HBZ mRNA but not tax mRNA in their PBMCs.

## Conclusions

These findings suggest that although expression of HBZ protein was suppressed in vivo in HAM/TSP patients and ACs, high expression of HBZ mRNA is closely associated with the pathogenesis of HAM/TSP.

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