

α -Amylase functions as a salivary gland-specific self T cell epitope in patients with Sjögren's syndrome

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Introduction. Analyses of T cell receptors (TCR) on T cells infiltrating labial salivary glands of patients with Sjögren's syndrome (SS) (1) indicate that the cells expand by antigen stimulation in context of major histocompatibility complex (MHC). Our previous studies showed that HSP10/60, TCRBV6S7, and Ro/SS-A 53kD proteins were detected as antigens recognised by T cells in labial salivary glands from patients with SS using T cell lines and SSCP-PCR methods (2,3). In this study, to elucidate the salivary gland-specific autoantigens, proteins from salivary glands were screened by West-Western method.

Materials and methods. Proteins derived from human salivary gland cDNA libraries were screened by West-Western method using TCR-CDR3 probe, which is antigen recognition region of TCR on T cells in labial salivary glands from patients with SS. Moreover, to examine whether TCR-CDR3 binding protein really act as antigen in labial salivary glands, PBL from 11 patients with SS were incubated with 9 different synthetic amino acids of α -amylase or salivary α -amylase.

Results. 13 cDNA clones were detected as proteins binding to TCR-CDR3 region. One was a human α -amylase salivary precursor (AA54-407), suggesting that α -amylase might be a salivary gland-specific autoantigen. SSCP analysis on TCR clearly showed that α -amylase reactive T cells were observed in the labial salivary glands from 3 of 11 patients with SS (27%).

Discussion and conclusion. These findings support the possibility that α -amylase serves as a salivary gland-specific T cell epitope and induces autoimmunity in SS.

References

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