

SHORT COMMUNICATION

O-6. B LYMPHOCYTES INDUCE EPITHELIAL CELLS OF SALIVARY GLANDS INTO APOPTOSIS THROUGH PROTEIN KINASE C DELTA ACTIVATION

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Keywords

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Introduction

Sjögren's syndrome (SS) is a chronic autoimmune epithelitis (1) associated with diffuse lymphocytic infiltration that varies in composition and differs according to lesion severity. T lymphocytes have been viewed as competent in their own right in the destruction of epithelial cells (EC), whereas B lymphocytes (2) that predominate in severe lesions have never been implicated in direct tissue damage. This study focuses on the direct effect of B lymphocytes on EC apoptosis within the salivary glands of patients with SS.

Material and Methods

Using co-culture experiments with human salivary gland (HSG) cell line cells and tonsillar B or T lymphocytes, we observed EC apoptosis by FACS. We then analyzed the different pathways for apoptosis by FACS, immunofluorescence and Western-blotting (Fas, protein kinase C delta (PKC δ)).

Results

We observed that direct HSG cell-B lymphocyte contacts were able to induce apoptosis in epithelial cells. This B lymphocyte-mediated cell death could not be ascribed to Fas-Fas ligand interactions but required translocation of PKC δ into the nucleus of epithelial cells. Ultimately, activation of PKC δ resulted in histone H2B phosphorylation on serine 14 and poly (ADP-ribose) polymerase cleavage (Figure 1).

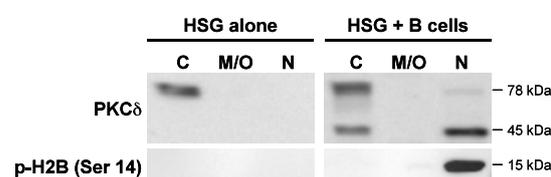


Figure 1 : PKC δ activation induces phosphorylation of histone H2B on serine 14. Subcellular fractionation of lysates from HSG cells alone or co-cultured with B lymphocytes was performed to isolate cytosol (C), membrane and organelles (M/O) and nucleus (N).

Conclusions

Our results suggest that B lymphocytes infiltrating the salivary glands of patients with SS could evoke epithelial cell apoptosis.

Acknowledgements

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References

1. Mavragani CP and Moutsopoulos HM. (2010) *Autoimmun Rev*, 9: 305-310.
2. Youinou P, et al. (2010) *Arthritis Rheum*, 62:2605-2610.