Proline-rich EBNA1 epitopes initiate cross-reacting autoantibodies in Systemic Lupus Erythematosus (SLE) & Multiple Sclerosis (MS)

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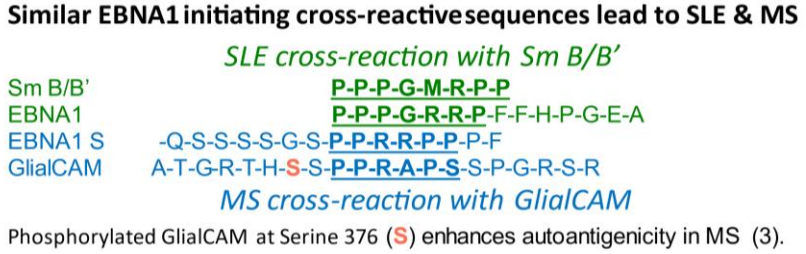
Recent results (1,2) support the hypothesis that SLE autoantibodies arise from the anti-EBNA1 heteroimmune response. For example, SLE anti-SmB/B' autoantibodies appear to begin with a proline rich sequence from EBNA1 that differs from the SmB/B' sequence by one amino acid (Figure). Other SLE autoantibodies cross-react with other EBNA1 structures (1). Some MS autoantibodies bind surface protein, glialCAM, and destroy nerve cells. Autoanti-glialCAM also binds a proline-rich EBNA1 sequence (Figure). The autoanti-glialCAM is a low concentration response in MS, while autoanti-SmB/B' is a high concentration response in SLE. EBNA1 inhibits the anti-EBNA1 CD 8 T cell response.

Ample evidence suggests that SLE & MS are initiated through the immune response against Epstein-Barr virus (EBV). EBV infection is present more frequently in SLE & MS than controls. Anti-EA antibodies are increased in frequency in both conditions. MS is associated with previous mononucleosis and has a higher level of anti-EBNA1 than in controls. SLE has a higher rate of anti-EBNA1. Other results show that EBNA2 is concentrated at the risk loci of both SLE & MS (4).



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