

## **Analysis of the expression of VLA2 on lymphocytes in Multiple Sclerosis lesions**

Breuer, J., Schneider-Hohendorf, T., Schwab, N., and Wiendl, H.

Department of Neurology, University of Münster, Münster, Germany

### Research question and background

VLA2 ( $\alpha 2\beta 1$ ) belongs to the family of integrins. Integrins are heterodimeric cell adhesion molecules that mediate the interactions of cells with the extracellular matrix and one another. Integrin-mediated adhesion events are central to the extravasation of lymphocytes into the central nervous system (CNS). VLA2 is expressed only on activated, not resting, immune cells and is responsible for their attachment to collagen at the site of inflammation. To investigate whether VLA2+ lymphocytes can be found in Multiple Sclerosis (MS) lesions immunofluorescence studies were performed on CNS tissues of patients with MS.

### Methods and tissues used

Formalin fixed paraffin embedded tissues sections of Multiple Sclerosis patients were used. For immunofluorescence studies assessing the expression of VLA2 on lymphocytes in MS lesions autopsies of gray and white matter of MS patients were stained with primary antibodies directed against CD49b (VLA2) and CD3. For staining VLA2, amplification with TSATM Plus Biotin kit was done according to the manufacturers instruction.

### Results and conclusion

So far no VLA2+ T cells could be detected in white matter lesions or in the gray matter of MS patients as assessed by immunofluorescence staining. Further stainings on additional tissues have to be performed in order to clarify whether VLA2+ lymphocytes can be found in MS lesions.