

The Intrathecal Antibody Response in Multiple Sclerosis Brain Does Not React Against Measles Virus

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Abstract

Multiple sclerosis (MS) is a chronic inflammatory demyelinating disease of the central nervous system (CNS) and is the most common disabling neurological disease of young adults. Although the cause of MS is unknown, genetic and epidemiological studies indicate that MS may be triggered by an environmental agent. The presence of intrathecally produced antibodies, which produce oligoclonal Ig bands in the CNS of MS patients, provides tools for investigating the target of the inflammatory response. In most of the CNS conditions with oligoclonal bands the target is known and the antibody is directed against an infectious, causative agent. For example, in subacute sclerosing panencephalitis, a measles virus (MV) infection of the brain, the oligoclonal bands and intrathecal antibodies are primarily directed against MV. In earlier studies of MS, we demonstrated that the intrathecal antibody response in MS brain does not react to varicella zoster or Epstein-Barr virus. The current study investigates the reactivity of the intrathecal antibody response in MS brain to MV. We isolated individual CD38(+) plasma cells from MS brain to produce recombinant antibodies (rAbs). These rAbs likely represent oligoclonal bands and were used to immunostain MV-infected or uninfected monkey kidney (Vero) cells.

Keywords:

Although many of the rAbs from MS brain reacted against auto antigens in several mouse and human tissues none of fifteen MS rAbs reacted against MV infected cells. These results indicate that measles virus is not a disease relevant antigen in MS