

CLINICAL SPECIFICATIONS

HUMAN HERPESVIRUS-6

Pathogen Type:

Human Herpesvirus-6 (HHV-6), belonging to the *betaherpesvirus* subfamily, is a lymphotropic virus, which infects mainly T cells *in vitro*, causes acute and latent infections.

Associated With:

Febrile seizures¹
 Multiple sclerosis²
 Lymphadenitis³
 Chronic fatigue syndrome⁴

Known Cross-Reactions: Myelin basic protein,⁵ Human herpesvirus-7⁶

Clinical Significance:

The detection of antibodies to Human Herpesvirus-6 indicates the patient has increased risk of chronic fatigue syndrome, fibromyalgia, lupus, and autoimmunities of the nervous system, joints and thyroid. Most humans acquire HHV-6 during early childhood and after initial infection, the virus latently remains in the host, but can be reactivated in immunocompromised situations such as HIV infection and organ transplantation.⁷ HHV-6 is capable of persisting in the host after primary infection for many years. This persistence involves both a true latent state and a low-level chronic replication.⁸ Salivary glands and brain tissue are suspected of harboring persistent HHV-6 infection. Candidate sites for latency are monocytes and early bone marrow progenitor cells.⁸ Depending on a person's genetic susceptibility, a persistent HHV-6 infection may lead to neurological autoimmunity via a cascade of events that starts with elevated HHV-6 IgG and release of proinflammatory cytokines, which opens the blood-brain barrier allowing HHV-6 IgG to react to neurons and cause the release of myelin.

This array tests for IgG immune reactivity associated with Human Herpesvirus-6. This is not a measurement of acute infection. Equivocal or out-of-range results indicate IgG antibody reactivity to the tested antigen. We tested 288 blood donor sera against Human Herpesvirus-6 antigens at optimal dilution, 11% of these donors were IgG reactive.

References:

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3. Maric, et al. Human herpesvirus-6-associated acute lymphadenitis in immunocompetent adults. *Modern Pathol*, 2004; 17:1427-1433.
4. Di Luca, et al. Human herpesvirus 6 and human herpesvirus 7 in chronic fatigue syndrome. *J Clin Microbiol*, 1995; 33(6):1660-1661.
5. Tejada-Simon, et al. Cross-reactivity with myelin basic protein and human herpesvirus-6 in multiple sclerosis. *Ann Neurol*, 2003; 53:189-197.
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8. De Bolle, et al. Update on human herpesvirus 6 biology, clinical features, and therapy. *Clin Microbiolo Rev*, 2005; 18(1):217-245.