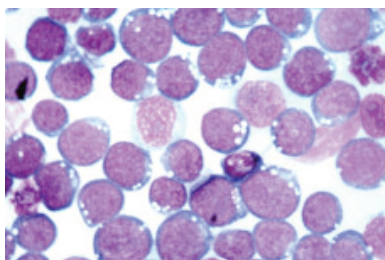
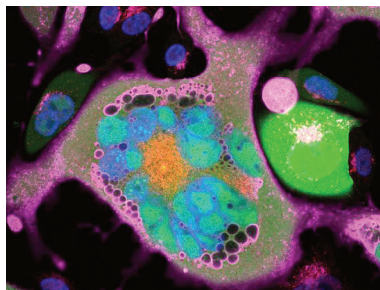


VIRAL PANEL COMPREHENSIVE

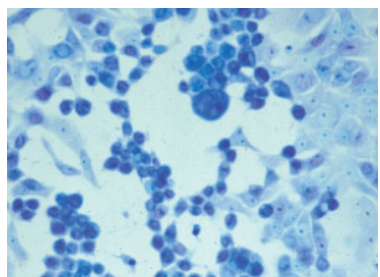
- EBV Viral Capsid (VCA) IgG
- EBV Viral Capsid (VCA) IgM
- EBV Early Antigen (EA) - D IgG
- EBV Nuclear Antigen (EBA) IgG
- EBV Nuclear Antigen (EBA) IgM
- Cytomegalovirus (CMV) IgG
- Cytomegalovirus (CMV) IgM
- Herpes simplex Virus (HSV) 1+2 IgG
- Herpes simplex Virus (HSV) 1+2 IgM
- Human Herpes Type 6 (HHV-6) IgG
- Human Herpes Type 6 (HHV-6) IgM
- Varicella zoster IgG
- Rubella (Measles) IgG
- Rubella (Measles) IgM



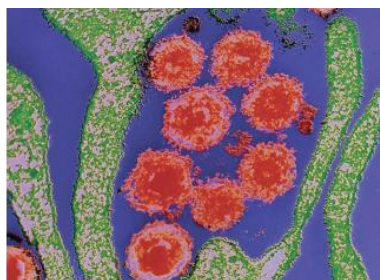
EBV



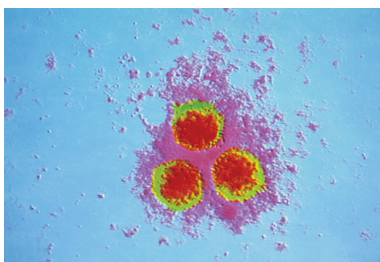
CMV



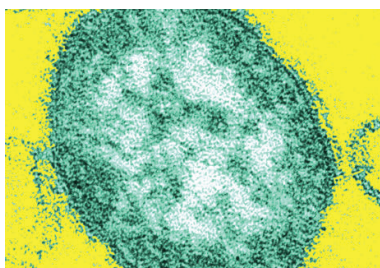
HSV 1+2



HHV-6



VZV



Measles



**Specimen
requirement:
2 mL Serum**



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VIRAL PANEL COMPREHENSIVE

Recommended for patients who have autoimmune disorders with the possible involvement of infectious agents.

Autoimmune diseases are borne out of the relationship between genetic and environmental factors. Both factors can increase susceptibility to autoimmunity by affecting the overall reactivity and quality of the cells involved in the immune system. Among contributing environmental factors are infectious agents. Viral infections, by shifting T-cell balance toward Th1 cells, may predispose an individual toward autoimmunity. Viruses can also affect the ability of T-cells to detect antigens by cross-reaction (molecular mimicry).

A cross-reaction between measles, EBV, CMV or herpes-6 with joint, thyroid, or brain tissue antigens are just some examples of molecular mimicry, in which immune reaction against viral antigens may result in antibody production attacking the autoantigens in humans. Subsequent viral infections are thought to cause exacerbation

of the disease by further activation of the immune response against viral and self-antigens.

Based on these mechanisms of action, the measurement of antibodies against different viruses is recommended. Furthermore, if antibody levels are significantly elevated, various treatment strategies with anti-viral agents should be implemented. If viral infections remain untreated, they may result in over-activation of the immune system, which may subsequently progress to autoimmune diseases. The association between viruses and autoimmune diseases is shown in the table below. High levels of IgG antibodies against different viral antigens indicate chronic exposure, while high IgM antibody levels indicate acute and recent infection with a particular virus.

The Association between Viruses and Autoimmune Diseases

	EBV	CMV	Herpes-1	Herpes-2	Herpes-6	VZV	Measles
Autism	+	+	+	+	++		++
SLE	+	+			+		
RA	++	++					
Thyroiditis	++						
Sjögrens	++				++		
Myocarditis	+	+					
Multiple Sclerosis	+				++		++
Type-1 Diabetes	+	+					
Guillain-Barré Syndrome	+	+					
Uveitis		++	++	++			
Keratitis			+				
Autoimmune Hepatitis			+			++	
Reiter's Syndrome	+	+	+			+	
Polymyositis	+						
Pemphigus	+					+	
Scleroderma		+					
Psoriasis		+					
ITP	+	+					
IgA Nephritis	++	++					
Glomerulonephritis	++						

+ indicates association

++ indicates strong association



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