NovaTec
Immundiagnostica GmbH

Epstein-Barr Virus (EBV)

The Epstein-Barr virus (HHV 4) is the pathogen in infectious mononucleosis and is also implicated in lymphomas (including Burkitt lymphomy) and nasopharyngeal carcinomas.

EBV enters the body through the mucosa. It replicates in epithelial cells of the oropharynx or cervix and enter B lymphocytes, where it continues to replicate. This results in the clinical picture of mononucleosis (kissing disease or Pfeiffer disease), which is characterized by fever and a generalized but mainly cervical swelling of the lymph nodes, typically accompanied by tonsillitis, pharyngitis, and some cases of mild hepatic involvement. EBV infects only a narrow spectrum of hosts and replicates very slowly. It persists in a latent state in B lymphocytes and can lead to their immortalization and tumor transformation.

EBV is excreted in saliva and pharyngeal secretions and is transmitted by close contact (“kissing disease”). As with all herpesviruses the level of generalized contamination is high (80-90 % of the adult population is infected), with the process beginning in childhood and continuing throughout adolescence. In undeveloped countries the frequency of occurrence is - because of the hygienic situation – much higher and amounts with the under-3 years old children close to 100%. The majority of infections run an asymptomatic course.

Disease	Symptoms	Complications
Infectious mononucleosis (Kissing disease or Pfeifer disease)	▪ Pharyngitis ▪ Headache ▪ Fever ▪ Exanthem ▪ Swelling of the lymph nodes ▪ Tonsillitis with a white coating ▪ In some cases hepatic involvement	▪ Meningitis ▪ Encephalitis ▪ Exanthem
Also implicated in:	Burkitt lymphomy Nasopharyngeal carcinomas Several lymphoproliferative syndromes	

Infections may be diagnosed by:

PCR

Serology: Determination of specific antibodies in the early phase of disease (VCA) resp. 6-8 weeks after infection (EBNA) based on the ELISA-technique.

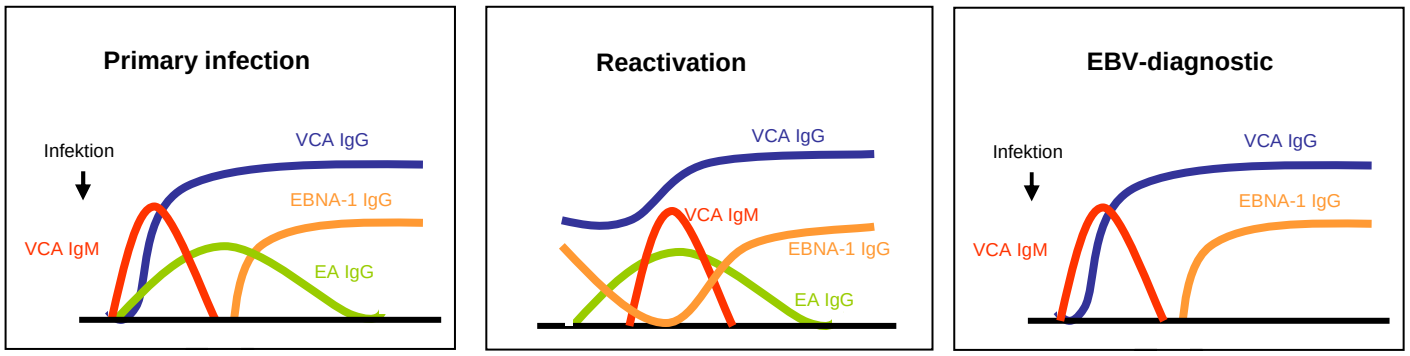
NovaLisa™ Epstein-Barr Virus (EBV-VCA bzw. EBNA) ELISA:

The NovaLisa™ Epstein-Barr Virus (EBV-VCA bzw. EBNA) ELISA is intended for the qualitative determination of IgG-/IgM- class antibodies against Epstein-Barr-viruses in human serum or plasma (citrate).

Antigens:

EBV-VCA IgG/IgM: synthetic p18 peptide of the Epstein-Barr virus
EBV-EBNA IgG: recombinant Epstein-Barr virus nuclear antigen type 1 (EBNA-1)

Interpretation of the test-results:



Antibody-profile				Stage of infection
EA(D) IgG	**VCA IgM**	**VCA IgG**	**EBNA IgG**	
-	-	-	-	EBV negative
-	-	+	+	retrograde infection
+/-	+	+/-	-	Primary infection (early phase)
+/-	+/-	+	+/-	Primary infection (transient phase)
+/-	-	+	+	Primary infection (reconvalescent phase)
+	+	+	+	Reactivated EBV-Infection

Specific performance characteristics:

	Intraassay			Interassay			Sensitivity %	Specificity %
	n	MW	Vk %	n	MW	Vk %		
EBV (VCA) IgG	10	1.56	2,9	15	1.55	4,3	100	100
EBV (VCA) IgM	25	1.32	5,1	24	1.37	6,9	93,9	96,3
EBV (EBNA) IgG	12	2.80	2,0	26	2.76	2,4	98,5	89,5

Order information:

ELISA	Number of determinations	Product number
Epstein-Barr Virus (EBV-VCA) IgG	96	EBVG0150
Epstein-Barr Virus (EBV-VCA) IgM	96	EBVM0150
Epstein-Barr Virus (EBV-EBNA) IgG	96	EBVG0580