



Epstein Barr Virus, LMP

IHC of Epstein Barr Virus on an FFPE Hodgkin's Lymphoma Tissue

Description The Epstein-Barr virus (EBV), also called Human Herpesvirus 4 (HHV-4), is a virus of the Herpes family, and is one of the most common viruses in humans. The virus can execute many distinct programs of gene expression, which can be broadly categorized as being lytic cycle or latent cycle. The lytic cycle, or productive infection, results in staged expression of several viral proteins with the ultimate objective of producing infectious virions. The latent cycle (lysogenic) programs are those that do not result in production of virions. A very limited, distinct set of viral proteins are produced during latent cycle infection. These include Epstein-Barr nuclear antigens EBNA-1, EBNA-2, EBNA-3A, EBNA-3B, EBNA-3C, EBNA-leader protein (EBNA-LP), latent membrane proteins LMP-1, LMP-2A and LMP-2B and the Epstein-Barr encoded RNAs (EBERs). In addition, EBV codes for at least twenty microRNAs which are expressed in latently infected cells.

EBV antibody targets the 60 kDa latent membrane protein LMP-1 encoded by the BNLF1 gene of the Epstein-Barr virus. There is cross-reactivity with Reed Sternberg cells of Hodgkin's Disease. The Epstein-Barr virus is an important cause of Infectious Mononucleosis and has been associated with Oral Carcinomas.

Antibody Type	Mouse Monoclonal	Clone	CS1-4
Isotype	IgG1	Reactivity	Paraffin, Frozen
Localization	Cytoplasmic	Control	Infected Tissue, Hodgkin's Lymphoma
Storage	Store at 2°-8°C	Stability	2 years

For long-term storage of the concentrated antibody, it is recommended that aliquots of the antibody be frozen at -20°C in glycerol 50% (frost-free freezers are not recommended). Repeated freezing and thawing must be avoided. Dilute using an antibody diluent such as ImmunoDetector Protein Block/Antibody Diluent (BSB 0040 and BSB 0041) or ImmunoDNA Background Blocker (BSB 0103-BSB 0107).

Presentation EBV antibody is a mouse monoclonal antibody derived from cell culture supernatant that is concentrated, dialyzed, filter sterilized and diluted in buffer pH 7.5, containing BSA and sodium azide as a preservative.

Availability	Catalog No.	Antibody Type	Dilution	Volume/QTY
	BSB 5484	Prediluted	Ready-To-Use	3.0 ml
	BSB 5485	Prediluted	Ready-To-Use	7.0 ml
	BSB 5486	Prediluted	Ready-To-Use	15.0 ml
	BSB 5487	Concentrated	1:50-1:200	0.1 ml
	BSB 5488	Concentrated	1:50-1:200	0.5 ml
	BSB 5489	Concentrated	1:50-1:200	1.0 ml
	BSB 5490	Control Slides		5

Note: For concentrated antibodies, please centrifuge prior to use to ensure recovery of all product.

- References**
1. Murray PG, et al. *J Pathol.* 1992;166:1-5
 2. Jarrett RF, et al. *Blood.* 1991;78:1-10
 3. Paillesen G, et al. *Lancet.* 1991;337:320-322
 4. Silverberg GS, et al. *Principles and Practice of Surgical Pathology and Cytopathology, 3rd edition.* 1997

Protocol Suggested protocol on reverse

Recommended Immunohistochemical Protocol

- Pretreatment**
1. Cut and mount 3-4 micron formalin-fixed paraffin-embedded tissues on positive charged slides.
 2. Air dry for 2 hours at 58° C.
 3. Deparaffinize, dehydrate and rehydrate tissues.
 4. Subject tissues to heat epitope retrieval using a suitable retrieval solution such as **ImmunoDNA Retriever with Citrate** (BSB 0020-BSB 0023) or **EDTA** (BSB 0030-BSB 0033).
 5. Any of three heating methods may be used:
 - a. **Electric Pressure Cooker**
Place standoff rack at base of pressure cooker. Add 1-2 inches of distilled water to the pressure cooker and turn heat to high, and incubate for 15 minutes. Open and immediately transfer slides to room temperature.
 - b. **Water Bath Method**
Place tissues/slides in a pre-warmed staining dish or coplin jar containing the **ImmunoDNA Retriever with Citrate** or **EDTA** in a water bath set at 95°-99° C. Incubate for 30-60 minutes.
 - c. **Conventional Steamer Method**
Place tissues/slides in a pre-warmed staining dish or coplin jar containing the **ImmunoDNA Retriever with Citrate** or **EDTA** in a Steamer, cover and steam for 30-60 minutes.
 6. After heat treatment, transfer slides in **ImmunoDNA Retriever with Citrate** or **EDTA** to room temperature and let stand for 15-20 minutes.
 7. Wash slides with IHC wash buffer or DI water.
 8. Continue IHC staining protocol.

Immunohistochemical Protocol

Step	ImmunoDetector (AP or HRP)	PolyDetector (AP or HRP)
Peroxidase/AP Block	5 minutes	5 minutes
Primary Antibody	30 minutes	45 minutes
Secondary Biotinylated Link	10 minutes	Not Applicable
AP or HRP Label	10 minutes	45 minutes
Substrate-Chromogen	5-10 minutes	10 minutes
Counterstaining	Time varies with counterstain	Time varies with counterstain

