



CD163

IHC of CD163 on an FFPE Tonsil Tissue

Description CD163 is a 130 kDa membrane glycoprotein. CD163 was recently identified as an acute phase-regulated transmembrane protein whose function is to mediate the endocytosis of haptoglobin-hemoglobin complexes. Solubilized in plasma, CD163 functions as an anti-inflammatory signal and has many roles in disease processes that range from autoimmune conditions such as Rheumatoid Arthritis to Atherosclerosis. CD163 is expressed exclusively on the cell surface of human monocytes and macrophages that evolve predominantly in the late phase of inflammation, and is, therefore, very useful for macrophage-phenotyping. This receptor is expressed on the surface of monocytes (low expression) and histiocytes (high expression).

Staining for CD163 has been helpful in distinguishing synovial macrophages from synovial intimal fibroblasts in the setting of Rheumatoid Arthritis, where its specificity for macrophages was found to be superior to that of CD68, which does not discriminate between these cell types. Flow-cytometry studies have confirmed that CD163 expression is limited to Leukemias with monocytic differentiation. Positive staining can be seen in the skin (histiocytes), gut, Kupffer cells, a few aveolar macrophages, the main population of macrophages in the placenta, and in varying degrees in macrophages in inflamed tissue including tumor tissue, depending on the inflammatory stage. Red-pulp, not white-pulp, macrophages in the spleen and cortical macrophages of the thymus are stained by CD163.

Antibody Type	Mouse Monoclonal	Clone	MRQ-26
Isotype	IgG1	Reactivity	Paraffin, Frozen
Localization	Cytoplasmic, Membranous	Control	Placenta, Tonsil, Lymph Node
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 CD163 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 6303	Prediluted	Ready-To-Use	3.0 ml
	BSB 6304	Prediluted	Ready-To-Use	7.0 ml
	BSB 6305	Prediluted	Ready-To-Use	15.0 ml
	BSB 6306	Concentrated	1:25-1:100	0.1 ml
	BSB 6307	Concentrated	1:25-1:100	0.5 ml
	BSB 6308	Concentrated	1:25-1:100	1.0 ml
	BSB 6309	Control Slides		5

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

- References**
1. Van den Heuvel MM, et al. *J Leukoc. Biol.* 1999;66(5):858-66
 2. Matsushita N, et al. *Clin. Exp. Immuno.* 2002;130(1):156-61
 3. Buechler C, et al. *J Leukoc Biol.* 2000;67:97-103
 4. Kristiansen M, et al. *Nature.* 2001;409:198-201

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

