

## DESCRIPTION

<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human VCAM-1/CD106 in direct ELISAs.
<b>Source</b>	Monoclonal Mouse IgG <sub>1</sub> Clone # 1027433
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	Chinese Hamster Ovary cell line CHO-derived human VCAM-1/CD106 Phe25-Glu698 Accession # P19320-1
<b>Conjugate</b>	Alexa Fluor 594 Excitation Wavelength: 590 nm Emission Wavelength: 617 nm
<b>Formulation</b>	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide.  *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

## APPLICATIONS

**Please Note:** Optimal dilutions should be determined by each laboratory for each application. [General Protocols](#) are available in the Technical Information section on our website.

	<b>Recommended Concentration</b>	<b>Sample</b>
<b>Flow Cytometry</b>	0.25-1 µg/10 <sup>6</sup> cells	HuT 78 human cutaneous T cell lymphoma cell line

## PREPARATION AND STORAGE

<b>Shipping</b>	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<b>Protect from light. Do not freeze.</b> <ul style="list-style-type: none"> <li>12 months from date of receipt, 2 to 8 °C as supplied.</li> </ul>

## BACKGROUND

VCAM-1, also known as CD106, is an immunoglobulin (Ig)-like adhesion molecule that is mainly expressed in endothelial cells and other cell types including macrophages, dendritic cells, neurons, smooth muscle cells, fibroblasts, and oocytes (1, 2). It plays a critical role in inflammation by recruiting leukocytes to acute and chronic inflammation sites (3, 4). Alternatively-spliced forms are known to occur, but the most common form is a type I transmembrane protein with a 674 aa extracellular domain (ECD) that includes seven C2-type immunoglobulin domains, a 22 aa transmembrane segment, and a 19 amino acid (aa) cytoplasmic tail. Within the ECD, human VCAM-1 shares 75% and 76% aa sequence identity with the mouse and rat VCAM-1, respectively. VCAM-1 binds to leukocyte integrins alpha 4 beta 1 (VLA-4) and alpha 4 beta 7. During the inflammatory adhesion mechanism, activated integrins halt rolling leukocytes and attach them firmly to the vascular endothelium. The VCAM-1:VLA-4/ alpha 4 beta 7 interaction is also thought to be involved in the extravasation of white blood cells through the blood vessel wall to sites of inflammation (5). ELISA techniques have shown that detectable levels of soluble VCAM-1 are present in the biological fluids of apparently normal individuals, but elevated levels of serum VCAM-1 are indicative of future Atrial Fibrillation incident as well as liver disease (6, 7). Tumor cells use overexpression of VCAM-1 as means of escaping immune surveillance (8).

### References:

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5. Langer, H.F. *et al.* 2009. J Cell Mol Med. **13**:1211.
6. Willett, K. *et al.* 2017. JAMA Cardiol. **2**:516.
7. Lo Iacono, O. *et al.* 2008. Liver Int. **28**:1129.
8. Wu, T.C. *et al.* 2007. Cancer Research. **67**:6003

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