



# SZABO SCANDIC

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## Mouse anti CD11a (activator)

Catalogue number: **MUB0364P**

Clone	NKI(SPV)-L16
Isotype	IgG2a
Product Type	Primary Antibodies
Units	0.1 mg
Host	Mouse (Balb/c)
Species reactivity	Human
Application	Flow cytometry Immunoprecipitation

## Distributors

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### Background

Integrin, alpha L (antigen CD11A (p180), lymphocyte function-associated antigen 1; alpha polypeptide), also known as ITGAL, is a Human gene which functions in the immune system. It is involved in cellular adhesion and costimulatory signaling. ITGAL encodes the integrin alpha L chain. Integrins are heterodimeric integral membrane proteins composed of an alpha chain and a beta chain. This I-domain containing alpha integrin combines with the beta 2 chain (ITGB2) to form the integrin lymphocyte function-associated antigen-1 (LFA-1), which is expressed on all leukocytes. LFA-1 is part of the family of leukocyte integrins that are recognised by their common  $\beta$ -chains (CD18). LFA-1 also has a distinct  $\alpha$ -chain (CD11a). LFA-1 is expressed on lymphocytes, monocytes and granulocytes; it has been shown that LFA-1 contributes to the adhesion reaction of these cells. Blocking experiments with anti-LFA monoclonal antibodies demonstrated that LFA-1 inhibits the adhesion step effector and target cells in cytotoxic T lymphocyte, natural killer and lectin dependent cytotoxicity. LFA-1 is involved in recruitment to the site of infection. It binds to ICAM-1 on antigen-presenting cells and functions as an adhesion molecule. LFA-1 is the first to bind T-cells to antigen-presenting cells and initially binds weakly. A signal from the T-cell receptor and/or the cytokine receptor changes the conformation and prolongs the cell contact, allowing the T-cell to proliferate. A unique antibody NKI(SPV)-L16, reacting with the  $\alpha$ -chain of the Human leukocyte function-associated Ag-1 (LFA-1) has been made available. This antibody stimulates homotypic cell-cell interactions in a manner very similar to 12-O-tetradecanoyl-phorbol-13-acetate (TPA), in contrast to other anti-LFA-1 mAb which inhibit cell aggregation. Immunoprecipitation and enzyme digestion studies revealed that NKI-L16 recognizes a unique epitope on the cy-chain of LFA-1, most likely situated close to the transmembrane segment of the molecule. It is hypothesized

that NKI-L16 or TPA can cause the LFA-1 molecule to convert from an inactive to an active configuration, thereby permitting binding of LFA-1 to its natural ligand. This mAb directed, in contrast to other anti-LFA-1 antibodies, stimulates rather than inhibits homotypic cell aggregate formation, but does not affect cell proliferation.

#### **Source**

The antibody was raised by immunization of Balb/c mice with monocytes. The unique activation dependent epitope of the SPV-L16 antibody on the  $\alpha$ -chain of LFA-1 is relatively insensitive to trypsin treatment and thus most likely located close to the transmembrane segment of the protein.

#### **Product**

Each vial contains 100  $\mu$ l 1 mg/ml purified monoclonal antibody in PBS containing 0.09% sodium azide.

#### **Applications**

NKI(SPV)-L16 is useful for flow cytometry and, immunoprecipitation. Optimal antibody dilution should be determined by titration.

#### **Specificity**

This antibody recognizes an activation epitope of CD11a and has been essential to define inside-out signaling of integrin. Homotypic cell aggregate formation is stimulated (see also Background).

#### **Storage**

Store at 4°C, or in small aliquots at -20°C.

#### **References**

1. Keizer GD, Visser W, Vliem M, Figdor CG. A monoclonal antibody (NKI-L16) directed anti a unique epitope on the alpha chain of Human leukocyte function-associated antigen 1 induces homotypic cell-cell interactions. *J. Immunol.* 140: 1393-1400, 1988.
2. Van Kooyk Y, Weder P, Hogervorst F, Verhoeven AJ, van Seventer G, te Velde AA, Borst J, Keizer GD, Figdor CG. Activation of LFA-1 through a Ca<sup>2+</sup>(+)-dependent epitope stimulates lymphocyte adhesion. *J Cell Biol.* 112: 345-54, 1991.
3. Van Kooyk Y, van de Wiel-van Kemenade P, Weder P, Kuijpers TW, Figdor CG. Enhancement of LFA-1-mediated cell adhesion by triggering through CD2 or CD3 on T lymphocytes. *Nature.* 342:811-813, 1989.

#### **Caution**

This product is intended FOR RESEARCH USE ONLY, and FOR TESTS IN VITRO, not for use in diagnostic or therapeutic procedures involving humans or animals. This product contains sodium azide. To prevent formation of toxic vapors, do not mix with strong acidic solutions. To prevent formation of potentially explosive metallic azides in metal plumbing, always wash into drain with copious quantities of water. This datasheet is as accurate as reasonably achievable, but Nordic-MUBio accepts no liability for any inaccuracies or omissions in this information.

