Technical Data Sheet

# Alexa Fluor® 647 Mouse anti-Human IL-21

## Product Information

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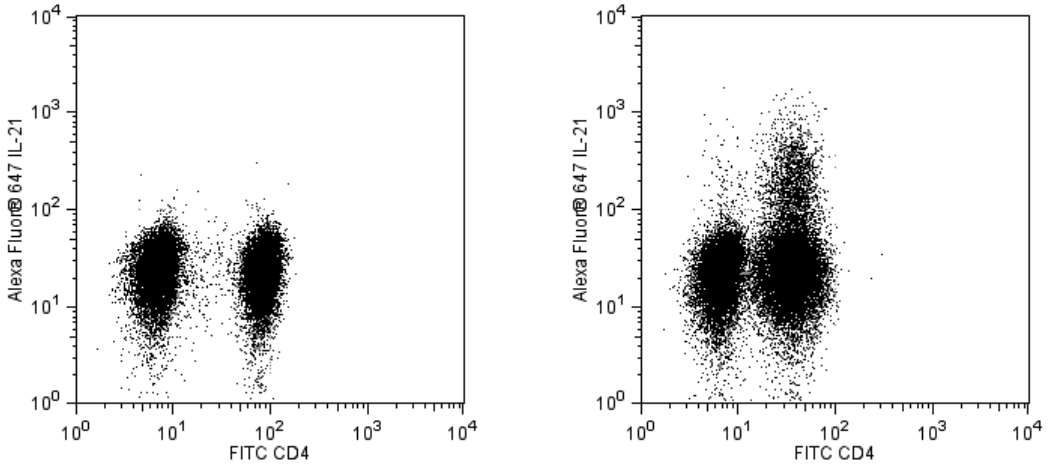
|---|---|
| **Material Number:** | **560493** |
| **Alternate Name:** | Interleukin-21, IL21, Za11 |
| **Size:** | 100 tests |
| **Vol. per Test:** | 20 µl |
| **Clone:** | 3A3-N2.1 |
| **Immunogen:** | Human |
| **Isotype:** | Mouse IgG1, κ |
| **Reactivity:** | QC testing: Human |
| **Storage Buffer:** | Aqueous buffered solution containing BSA and ≤0.09% sodium azide. |

## Description

Human Interleukin-21 (IL-21) is a member of the type I cytokine family that is encoded by a gene resident on chromosome 4. The mature form of human IL-21 is a 131 amino acid protein. IL-21 is produced by activated NKT and multiple CD4+ T cell subsets including effector memory and central memory CD4+ T cells and differentiated T helper cell subsets polarized towards Th17 cell and T follicular helper (Tfh) phenotypes. IL-21 plays important protective roles in the regulation of hematopoiesis and both innate and adaptive immune responses and adverse roles in promoting autoimmunity. IL-21 costimulates the proliferation and differentiation of CD4+ T cells. It enhances the proliferation of and cytotoxicity mediated by natural killer (NK) cells and CD8+ T cells. IL-21 costimulates B cell proliferation and differentiation into plasma cells producing immunoglobulins with IgG isotypes. IL-21 can also regulate the functions of dendritic cells and other myeloid cells. IL-21 exerts its biological activities by binding to and activating the Janus activating kinases (JAK1 and JAK3) and signal transducers and activators of transcription (STAT1, STAT3, STA5a and STAT5b) signaling pathways through the IL-21 receptor (IL-21R) complex. The IL-21R complex is comprised of the IL-21R alpha subunit and the common cytokine receptor gamma subunit (γ c; CD132). The monoclonal 3A3-N2 antibody specifically binds to human IL-21.




***Flow cytometric analysis of Alexa 647 anti-human IL-21 on stimulated and non-stimulated PBMC.*** *Human PBMC were cultured with media alone (left panel) or stimulated with PMA/Ionomycin in the presence of BD GolgiStop™ (Cat. No. 554724) for 5 hours (right panel). Cells were then fixed with BD Cytofix™ Fixation Buffer (Cat. No. 554655), and stored in BD Pharmingen™ Stain Buffer (FBS) (Cat. No. 554656) at 4°C overnight. The cells were then permeabilized using BD Perm/Wash™ Buffer (Cat. No. 554723) followed by staining with FITC Mouse Anti-Human CD4 (clone RPA-T4, Cat. No. 555346) and Alexa 647 Mouse anti-Human IL-21. The dot plots were derived from gated lymphocytes. Flow cytometry was performed on a BD FACSCalibur™ Flow Cytometer.*

## Preparation and Storage

Store undiluted at 4°C and protected from prolonged exposure to light. Do not freeze.

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.

The antibody was conjugated to Alexa Fluor® 647 under optimum conditions, and unreacted Alexa Fluor® 647 was removed.

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## Application Notes

**Application**

| | |
|---|---|
| Intracellular staining (flow cytometry) | Routinely Tested |

**Recommended Assay Procedure:**

## Suggested Companion Products

| Catalog Number | Name | Size | Clone |
|---|---|---|---|
| 554724 | Protein Transport Inhibitor (Containing Monensin) | 0.7 ml | (none) |
| 554655 | Fixation Buffer | 100 ml | (none) |
| 554656 | Stain Buffer (FBS) | 500 ml | (none) |
| 554723 | Perm/Wash Buffer | 100 ml | (none) |
| 555346 | FITC Mouse Anti-Human CD4 | 100 tests | RPA-T4 |
| 557714 | Alexa Fluor® 647 Mouse IgG1 κ Isotype Control | 100 tests | MOPC-21 |

## Product Notices

1. This reagent has been pre-diluted for use at the recommended Volume per Test. We typically use 1 × 10^6 cells in a 100-µl experimental sample (a test).
2. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
3. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at www.bdbiosciences.com/colors.
4. The Alexa Fluor®, Pacific Blue™, and Cascade Blue® dye antibody conjugates in this product are sold under license from Molecular Probes, Inc. for research use only, excluding use in combination with microarrays, or as analyte specific reagents. The Alexa Fluor® dyes (except for Alexa Fluor® 430), Pacific Blue™ dye, and Cascade Blue® dye are covered by pending and issued patents.
5. Alexa Fluor® 647 fluorochrome emission is collected at the same instrument settings as for allophycocyanin (APC).
6. Alexa Fluor® is a registered trademark of Molecular Probes, Inc., Eugene, OR.
7. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
8. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
9. An isotype control should be used at the same concentration as the antibody of interest.

## References


Coquet JM, Kyparissoudis K, Pellicci DG, et al.. IL-21 is produced by NKT cells and modulates NKT cell activation and cytokine production.. *J Immunol.* 2007; 178(5):2827-2834. (Biology)

Onoda T, Rahman M, Nara H, et al.. Human CD4+ central and effector memory T cells produce IL-21: effect on cytokine-driven proliferation of CD4+ T cell subsets.. *Int Immunol.* 2007; 19(10):1191-1199. (Biology)

Parrish-Novak J, Dillon SR, Nelson A, Hammond A, Sprecher C, Gross JA, Johnston J, Madden K, Xu W, West J, Schrader S, Burkhead S, Heipel M, Brandt C,. Interleukin 21 and its receptor are involved in NK cell expansion and regulation of lymphocyte function.. *Nature.* 2000; 408(6808):57-63. (Biology)

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