SANTA CRUZ BIOTECHNOLOGY, INC.

T cell/Neutrophil Marker (RPN3/57): sc-59376

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The Power to Question

BACKGROUND

T cells, along with B cells and NK cells, belong to the group of white blood cells known as lymphocytes. They play a central role in cell-mediated immunity and are distinguished by their T cell receptor (TCR), a special receptor on their cell surface. T cells originate in the bone marrow, mature in the thymus, and travel in the blood to other lymphoid tissues, such as the tonsils, spleen and lymph nodes. Neutrophils, also referred to as neutrophil granulocytes, are the most abundant type of white blood cell. Integral parts of the mammalian immune system, neutrophils deal with defense against bacterial infection and other minute inflammatory behaviors. Neutrophils are the first reaction of the immume system to bacterial infection, swiftly congregating at the initial site of infection. Capable of ingesting microorganisms and even other particles, individual neutrophils only exist through the execution of one major phagocytic event, utilizing all of their energy reserves in a powerful "respiratory burst". Markers for T cells and neutrophils are useful in the study of function and behavior of these tissues.

REFERENCES

1. Grunow, R., et al. 1987. Masking of pan T cell markers in patients with autoimmune diseases. Dermatol. Monatsschr. 173: 390-399.
2. Moingeon, P., et al. 1989. The structural biology of CD2. Immunol. Rev. 111: 111-144.
3. Egeland, T., et al. 1991. Myeloid differentiation human granulocyte-monocyte colony-stimulating factor (CSF), granulocyte-CSF, monocyte-CSF and interleukin-3. Blood 78: 3192-3199.
4. Chetty, R. and Gatter, K. 1994. CD3: structure, function and role of immunostaining in clinical practice. J. Pathol. 173: 303-307.
5. Youinou, P., et al. 1999. CD5 expression in human B cell populations. Immunol. Today 20: 312-316.
6. Reumaux, D., et al. 2006. Priming by tumor necrosis factor α of human neutrophil NADPH-oxidase activity induced by anti-proteinase-3 or anti-myeloperoxidase antibodies. J. Leukoc. Biol. 80: 1424-1433.
7. Guo, R.F., et al. 2006. *In vivo* regulation of neutrophil apoptosis by C5a during sepsis. J. Leukoc. Biol. 80: 1575-1583.
8. McNamee, L.A. and Harmsen, A.G. 2006. Both influenza-induced neutrophil dysfunction and neutrophil-independent mechanisms contribute to increased susceptibility to a secondary *Streptococcus pneumoniae* infection. Infect. Immun. 74: 6707-6721.
9. Fenk, R., et al. 2006. Sustained G-CSF plasma levels following administration of pegfilgrastim fasten neutrophil reconstitution after high-dose chemotherapy and autologous blood stem cell transplantation in patients with multiple myeloma. Exp. Hematol. 34: 1296-1302.

SOURCE

T cell/Neutrophil Marker (RPN3/57) is a mouse monoclonal antibody raised against peritoneal neutrophils of rabbit origin.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

T cell/Neutrophil Marker (RPN3/57) is available conjugated to agarose (sc-59376 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-59376 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-59376 PE), fluorescein (sc-59376 FITC), Alexa Fluor® 488 (sc-59376 AF488), Alexa Fluor® 546 (sc-59376 AF546), Alexa Fluor® 594 (sc-59376 AF594) or Alexa Fluor® 647 (sc-59376 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-59376 AF680) or Alexa Fluor® 790 (sc-59376 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

T cell/Neutrophil Marker (RPN3/57) is recommended for detection of a subset of T cells and neutrophils of rabbit origin by immunofluorescence (starting dilution to be determined by researcher, dilution range 1:10-1:200) and flow cytometry (10-20 µl per 1 x 10^6 cells); non-reactive with RL5 cell line; may cross-react with T dependent areas in lymphoid tissue and infiltrating neutrophils.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

SELECT PRODUCT CITATIONS

1. Qian, L.W., et al. 2016. Exacerbated and prolonged inflammation impairs wound healing and increases scarring. Wound Repair Regen. 24: 26-34.
2. Karna, S.L., et al. 2016. RNA-Seq transcriptomic responses of full-thickness dermal excision wounds to *Pseudomonas aeruginosa* acute and biofilm infection. PLoS ONE 11: e0165312.
3. Jia, S., et al. 2017. Local application of statins significantly reduced hypertrophic scarring in a rabbit ear model. Plast. Reconstr. Surg. Glob. Open 5: e1294.
4. Kim, J.W., et al. 2020. Effect of expanding nanocellulose sponge on nasal mucosal defects in an animal model. Regen. Biomater. 7: 47-52.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.