

# Neutrophil Elastase (NP57): sc-53388

## BACKGROUND

Neutrophil Elastase (NE) is a serine protease that is expressed in bone marrow precursor cells, stored in peripheral blood granulocytes and implicated in the progression of a variety of inflammatory diseases, including idiopathic pulmonary fibrosis, rheumatoid arthritis, adult respiratory distress syndrome and cystic fibrosis. In neutrophils, Neutrophil Elastase contributes largely to the proteolysis of phagocytosed proteins, the migration of neutrophils and the remodeling of tissues following injury. Neutrophil Elastase, which is also designated medullasin, is secreted into the extracellular matrix, where it is then capable of destroying connective tissue proteins, including elastin, proteoglycans and Type IV Collagens. Neutrophil Elastase also mediates proteolysis by cleaving proteins that are associated with the complement system, such as antithrombin and Fibrinogen. Additionally, Neutrophil Elastase functions in secretion and mobilization of calcium in response to cathepsin G binding to platelet surface receptors.

## CHROMOSOMAL LOCATION

Genetic locus: ELANE (human) mapping to 19p13.3.

## SOURCE

Neutrophil Elastase (NP57) is a mouse monoclonal antibody raised against neutrophil granule proteins of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Neutrophil Elastase (NP57) is available conjugated to agarose (sc-53388 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-53388 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53388 PE), fluorescein (sc-53388 FITC), Alexa Fluor® 488 (sc-53388 AF488), Alexa Fluor® 546 (sc-53388 AF546), Alexa Fluor® 594 (sc-53388 AF594) or Alexa Fluor® 647 (sc-53388 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53388 AF680) or Alexa Fluor® 790 (sc-53388 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

Neutrophil Elastase (NP57) is recommended for detection of Neutrophil Elastase of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Neutrophil Elastase siRNA (h): sc-36042, Neutrophil Elastase shRNA Plasmid (h): sc-36042-SH and Neutrophil Elastase shRNA (h) Lentiviral Particles: sc-36042-V.

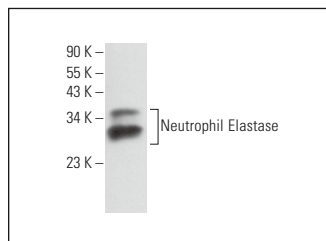
Molecular Weight of Neutrophil Elastase: 29 kDa.

Positive Controls: U-937 cell lysate: sc-2239, AML-193 whole cell lysate: sc-364182 or HL-60 whole cell lysate: sc-2209.

## STORAGE

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

## DATA



Neutrophil Elastase (NP57): sc-53388. Western blot analysis of Neutrophil Elastase expression in U-937 whole cell lysate.

## SELECT PRODUCT CITATIONS

1. Ibrahim, S.A., et al. 2015. Breast cancer associated a2 isoform vacuolar ATPase immunomodulates neutrophils: potential role in tumor progression. *Oncotarget* 6: 33033-33045.
2. Rai, V., et al. 2016. Vitamin D attenuates inflammation, fatty infiltration, and cartilage loss in the knee of hyperlipidemic mice. *Arthritis Res. Ther.* 18: 203.
3. Henry, C.M., et al. 2016. Neutrophil-derived proteases escalate inflammation through activation of IL-36 family cytokines. *Cell Rep.* 14: 708-722.
4. Kerros, C., et al. 2017. Neutrophil-1 mediates Neutrophil Elastase uptake and cross-presentation in breast cancer cells. *J. Biol. Chem.* 292: 10295-10305.
5. Rai, V., et al. 2020. The immune response after noise damage in the cochlea is characterized by a heterogeneous mix of adaptive and innate immune cells. *Sci. Rep.* 10: 15167.
6. Ibrahim, S.A., et al. 2020. Cancer-associated V-ATPase induces delayed apoptosis of protumorigenic neutrophils. *Mol. Oncol.* 14: 590-610.
7. Fatemi, A., et al. 2021. The impact of neutrophil extracellular trap from patients with systemic lupus erythematosus on the viability, CD11b expression and oxidative burst of healthy neutrophils. *BMC Immunol.* 22: 12.
8. Jeong, J.H., et al. 2021. Neutrophil extracellular trap clearance by synovial macrophages in gout. *Arthritis Res. Ther.* 23: 88.
9. Safi, R., et al. 2021. Investigating the presence of neutrophil extracellular traps in septal and lobular cutaneous panniculitides. *Int. J. Dermatol.* 60: 724-729.
10. Eid, E., et al. 2021. Characterizing the presence of neutrophil extracellular traps in neutrophilic dermatoses. *Exp. Dermatol.* 30: 988-994.

## RESEARCH USE

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