

Neutrophil Elastase (F-1): sc-55548

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 as a potent platelet agonist, where it potentiates the aggregation, secretion and mobilization of calcium in response to cathepsin G binding to platelet surface receptors.

REFERENCES

- Farley, D., et al. 1988. Molecular cloning of human Neutrophil Elastase. *Biol. Chem. Hoppe Seyler* 369: 3-7.
- Pulford, K.A., et al. 1988. Use of monoclonal antibody against human Neutrophil Elastase in normal and leukaemic myeloid cells. *J. Clin. Pathol.* 41: 853-860.

CHROMOSOMAL LOCATION

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

SOURCE

Neutrophil Elastase (F-1) is a mouse monoclonal antibody raised against amino acids 211-267 of Neutrophil Elastase of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Neutrophil Elastase (F-1) is recommended for detection of Neutrophil Elastase of human origin by Western Blotting (starting dilution 1:100, 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

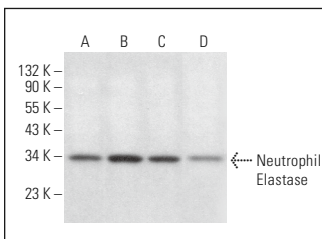
Molecular Weight of Neutrophil Elastase: 29 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209, U-937 cell lysate: sc-2239 or HEL 92.1.7 cell lysate: sc-2270.

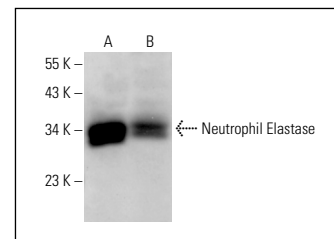
STORAGE

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

DATA



Neutrophil Elastase (F-1): sc-55548. Western blot analysis of Neutrophil Elastase expression in HEL 92.1.7 (A), K-562 (B), TF-1 (C) and NCI-H929 (D) whole cell lysates.



Neutrophil Elastase (F-1): sc-55548. Western blot analysis of Neutrophil Elastase expression in U-937 (A) and HL-60 (B) whole cell lysates.

SELECT PRODUCT CITATIONS

- Arelaki, S., et al. 2016. Gradient infiltration of neutrophil extracellular traps in colon cancer and evidence for their involvement in tumour growth. *PLoS ONE* 11: e0154484.
- Yildiz, K., et al. 2017. Role of NETs in the difference in host susceptibility to *Toxoplasma gondii* between sheep and cattle. *Vet. Immunol. Immunopathol.* 189: 1-10.
- John, D.S., et al. 2019. Deficiency of cathepsin C ameliorates severity of acute pancreatitis by reduction of Neutrophil Elastase activation and cleavage of E-cadherin. *J. Biol. Chem.* 294: 697-707.
- Mitsios, A., et al. 2020. Ticagrelor exerts immune-modulatory effect by attenuating neutrophil extracellular traps. *Int. J. Mol. Sci.* 21: 3625.
- Chrysanthopoulou, A., et al. 2021. Angiotensin II triggers release of neutrophil extracellular traps, linking thromboinflammation with essential hypertension. *JCI Insight* 6: e148668.
- Yildiz, K., et al. 2022. Determination of extracellular traps structures from sheep polymorphonuclear leukocytes to *Echinococcus granulosus* protozoa. *Exp. Parasitol.* 239: 108283.
- Das, D., et al. 2024. Complement component 5a receptor 1 and leukotriene B4 receptor 1 regulate neutrophil extracellular trap (NET) formation through Rap1a/B-Raf/ERK signaling pathway and their deficiency in term low birth weight newborns leads to deficient NETosis. *Int. Immunopharmacol.* 142: 113165.

RESEARCH USE

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



See **Neutrophil Elastase (G-2): sc-55549** for Neutrophil Elastase antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.