

Neutrophil Elastase (D-7): sc-365950

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

1. Farley, D., et al. 1988. Molecular cloning of human Neutrophil Elastase. *Biol. Chem. Hoppe-Seyler* 369: 3-7.
2. 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 (D-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 251-267 at the C-terminus 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 (D-7) 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.

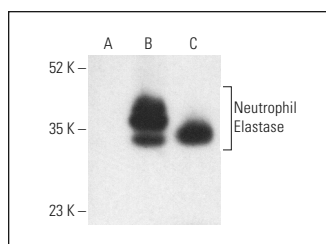
Molecular Weight of Neutrophil Elastase: 29 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209, U-937 cell lysate: sc-2239 or THP-1 cell lysate: sc-2238.

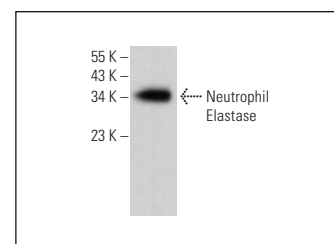
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



Neutrophil Elastase (D-7): sc-365950. Western blot analysis of Neutrophil Elastase expression in non-transfected 293T (A), human Neutrophil Elastase transfected 293T (B) and U-937 (C) whole cell lysates. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.



Neutrophil Elastase (D-7): sc-365950. Western blot analysis of Neutrophil Elastase expression in THP-1 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Alemán, O.R., et al. 2016. Differential use of human neutrophil Fcγ receptors for inducing neutrophil extracellular trap formation. *J. Immunol. Res.* 2016: 2908034.
2. Lu, H., et al. 2019. Advanced glycated end products alter neutrophil effect on regulation of CD₄⁺ T cell differentiation through induction of myeloperoxidase and Neutrophil Elastase activities. *Inflammation* 42: 559-571.
3. Fonseca, Z., et al. 2019. Pathogenic *Entamoeba histolytica*, but not *Entamoeba dispar*, induce neutrophil extracellular trap (NET) formation. *J. Leukoc. Biol.* 105: 1167-1181.
4. Díaz-Godínez, C., et al. 2021. New insights on NETosis induced by *Entamoeba histolytica*: dependence on ROS from amoebas and extracellular MPO activity. *Antioxidants* 10: 974.

STORAGE

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

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.