ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

Human Neutrophil Elastase Antibodies and controls

□ **Cat.** ETSE12-M	Mouse monoclonal Anti-Human Neutrophil Elastase IgG	**SIZE**: 100 ul
□ **Cat.** ETSE11-C	Purified human Neutrophil Elastase protein control for Western	**SIZE**: 100 ul

Neutrophil elastase (or leukocyte elastase) also known as ELA2 (elastase 2, neutrophil) is a serine protease in the same family as chymotrypsin and has broad substrate specificity. Secreted by neutrophils during inflammation, it destroys bacteria and host tissue. As with other serine proteases it contains a charge relay system composed of the catalytic triad of histidine, aspartate, and serine residues that are dispersed throughout the primary sequence of the polypeptide but that are brought together in the three dimension conformation of the folded protein. The gene encoding neutrophil elastase, ELA2, consists of five exons. It is one of the two human forms of elastase.

The neutrophil form of elastase (EC 3.4.21.37) is 218 amino acids long, with two asparagine-linked carbohydrate chains. It is present in azurophil granules in the neutrophil cytoplasm. There appear to be two forms of neutrophil elastase, termed IIa and IIb. Humans have six elastase genes which encode the structurally similar proteins elastase 1, 2, 2A, 2B, 3A, and 3B. Elastase 2 hydrolyzes proteins within specialized neutrophil lysosomes, called azurophil granules, as well as proteins of the extracellular matrix following the protein's release from activated neutrophils. Elastase 2 may play a role in degenerative and inflammatory diseases by its proteolysis of collagen-IV and elastin of the extracellular matrix. This protein degrades the outer membrane protein A (OmpA) of E. coli as well as the virulence factors of such bacteria as Shigella, Salmonella and Yersinia. Mutations in this gene are associated with cyclic neutropenia and severe congenital neutropenia (SCN). This gene is clustered with other serine protease gene family members, azurocidin 1 and proteinase 3 genes, at chromosome 19pter. All 3 genes are expressed coordinately and their protein products are packaged together into azurophil granules during neutrophil differentiation.

Source of Antigen and Antibodies

Antigen	Recombinant purified antigen grade Human Neutrophil Elastase
Ab Host/type	Mouse, monoclonal IgG1 (cat # ESTE12-M)
Ab Format	**Goat Anti-mouse IgG-HRP conjugate** Cat # 40320 (AP, biotin, FITC conjugates also available)
-ve control	Cat # 20008-1, Mouse (non-immune) Serum IgG, purified, suitable for ELISA, Western, IHC as –ve control

Isotype Controls

Catalog#	ProdDescription
20102-101	Mouse IgG1 isotype control, purified
20102-101-1	Mouse IgG1 isotype control, purified
20102-101-APC	Mouse IgG1-APC conjugate (isotype control)
20102-101-B	Mouse IgG1-Biotin conjugate (isotype control)
20102-101-F	Mouse IgG1-FITC conjugate (isotype control)
20102-101-FP	Mouse IgG1-FITC-PE conjugate
20102-101-HP	Mouse IgG1-HRP conjugate (isotype control)
20102-101-PC5	Mouse IgG1-PE-Cy5 conjugate (isotype control)
20102-101-PE	Mouse IgG1-PE conjugate (isotype control)

Purified human Neutrophil Elastase (>95% pure, ~30 Kda) was used for Western blot +ve control (**Cat #** ESTE11-**C**) is supplied in SDS-PAGE sample buffer (reduced). Load 10 ul/lane of ESTE11-C for good visibility with antibody Cat # ESTE11-A. Store at –20oC in suitable size aliquots. SDS may crystallize in cold conditions. It should redissolve by warming before taking it from the stock. It should be heated once prior to loading on gels. If the product has been stored for several weeks, then it may be preferable to add 5 ul of fresh 2x sample buffer per 10 ul of the ESTE11-C solution prior to heating and loading on gels. This preparation is not biologically active. It is not suitable for ELISA or other applications where native protein is required. Do not freeze, thaw, or heat repeatedly

Form & Storage of Antibodies/Peptide Control

pure IgG

□ 1 mg/ml or specified on the vial

□ solution □ lyophilized powder

Supplied in **Buffer**: PBS+0.02% azide

Reconstitute powder in PBS at a desired concn

Storage

Short-term: unopened, undiluted liquid vials at 20°C and powder at 4°C or -20°C..

Long-term: at –20°C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at –20°C or below.
Shipping: 4°C for solutions and room temp for powder

Recommended Usage

Western Blotting (1:1000-:1:30000 using Chemiluminescence technique

ELISA (1:10K-1:100K; using 50-100 ng control peptide/well).

Histochemistry & Immunofluorescence: no tested. we recommend testing antibody at 2-20 ug/ml.

Specificity & Cross-reactivity

Antibodies are specific for human neutrophil elastase with no reactivity with other proteins. Antibody reactivity on other species is not tested. Purified human neutrophil elastase protein is available for ready to use western blot control # ESTE11-C.

General References: Belaaaouaj A (2000) Science 289, 1185; Takahashi H (1988) JBC 263, 14739; Brower MS (1982) JBC 257, 9849; Weinrauch Y (2002) Nature 417, 91;

*This product is for in vitro research use only.

Related material available from ADI
Human Neutrophil elastase protein
Antibodies to Human Neutrophil elastase protein
ESTE12-M 120327A

Alpha Diagnostic Intl Inc., 6203 Woodlake Center Dr, S an Antonio, T X 7 8 24 4 , U S A;

India Contact:
Life Technologies (India) Pvt. Ltd.
306, Aggarwal City Mall, Opposite M2K Pitampura, Delhi – 110034 (INDIA). Ph: +91-11-42208000, 42208111, 42208222, Mobile: +91-9810521400 Fax: +91-11-42208444 Email: customerservice@lifetechindia.com Website: www.lifetechindia.com