

#### DESCRIPTION

|                                                                                                                                                                                                         |                                                                                                                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| <b>Species Reactivity</b>                                                                                                                                                                               | Human                                                                                                                       |
| <b>Specificity</b>                                                                                                                                                                                      | Detects human Neutrophil Elastase/ELA2 in direct ELISAs.                                                                    |
| <b>Source</b>                                                                                                                                                                                           | Monoclonal Mouse IgG <sub>2A</sub> Clone # 950302                                                                           |
| <b>Purification</b>                                                                                                                                                                                     | Protein A or G purified from hybridoma culture supernatant                                                                  |
| <b>Immunogen</b>                                                                                                                                                                                        | Chinese hamster ovary cell line CHO-derived recombinant human Neutrophil Elastase/ELA2<br>Met1-Asn252<br>Accession # P08246 |
| <b>Conjugate</b>                                                                                                                                                                                        | Alexa Fluor 594<br>Excitation Wavelength: 590 nm<br>Emission Wavelength: 617 nm                                             |
| <b>Formulation</b>                                                                                                                                                                                      | Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide                                                                |
| *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions. |                                                                                                                             |

#### APPLICATIONS

**Please Note:** Optimal dilutions should be determined by each laboratory for each application. [General Protocols](#) are available in the Technical Information section on our website.

|                             |                                                                        |
|-----------------------------|------------------------------------------------------------------------|
| <b>Western Blot</b>         | Optimal dilution of this antibody should be experimentally determined. |
| <b>ELISA</b>                | Optimal dilution of this antibody should be experimentally determined. |
| <b>Immunocytochemistry</b>  | Optimal dilution of this antibody should be experimentally determined. |
| <b>Immunohistochemistry</b> | Optimal dilution of this antibody should be experimentally determined. |

#### PREPARATION AND STORAGE

|                                |                                                                                                                   |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Shipping</b>                | The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below. |
| <b>Stability &amp; Storage</b> | Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied                          |

#### BACKGROUND

Neutrophil Elastase (ELA2, ELANE), also known as HNE, is a chymotrypsin family serine protease that plays a key role in pathogen clearance (1-3). It is expressed by promyelocytes and stored in the intracellular azurophilic granules of polymorphonuclear leukocytes (PMN) (4). These granules fuse with phagosomes, enabling Neutrophil Elastase to participate in the digestion and killing of endocytosed microbes. The enzyme is released by activated neutrophils at sites of inflammation, and it can remain associated with the cell surface or function as a component of neutrophil extracellular nets (NETs) which trap and kill microbial pathogens (5, 6). It also can degrade multiple extracellular matrix proteins including Elastin and Fibronectin (5). In the lung, this activity contributes to pathology in emphysema, cystic fibrosis, and adult respiratory distress syndrome (ARDS) (1). Neutrophil Elastase can be inhibited by Serpin A1/alpha 1-Antitrypsin, SLPI, Serpin B1, and Trappin-2/Elafin (7-11). Its activity in the lung is increased by exposure to tobacco smoke which inactivates Serpin A1 through methionine oxidation (12). Mature human Neutrophil Elastase shares 73% amino acid sequence identity with mouse and rat Neutrophil Elastase (13, 14). Multiple mutations in the human ELANE gene are causative of severe congenital and cyclic neutropenias (15).

#### PRODUCT SPECIFIC NOTICES

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