



# ProAxis Respiratory Research Solutions

## Proteases in Respiratory Disease

Active Neutrophil Elastase and Active Proteinase 3 are serine proteases that have been shown to correlate with the severity of several respiratory diseases such as cystic fibrosis, bronchiectasis, COPD, and alpha 1 antitrypsin (AAT) deficiency. They are currently used as endpoint measurements in researching efficacy of new inhibitors to these proteases or other anti-inflammatory therapies. With infection or inflammation in respiratory diseases, the concentration of active proteases overwhelms the number of inhibitors, which causes excessive proteolytic tissue degradation, damaging the airway walls and contributing to a destructive inflammatory cycle.

## Why choose ProAxis Respiratory Products?

ProteaseTag® Technology targets only the active form of the protease, thus providing a stronger correlation with pathogenic activity than assays that measure total protease levels (composites of the latent, active and inhibitor-enzyme complexes). Measuring these active proteases in sputum or BAL shows localized inflammatory activity and response within the respiratory tract.

### ProteaseTag® Active Neutrophil Elastase Immunoassay

- Suitable for use with a range of biological samples including sputum and BAL
- Specifically detects Active Neutrophil Elastase. High affinity binding removes risk of signal contamination by inhibited/AAT-complexed NE or other proteolytic species within biologically complex samples.
- Quantitative assay: Measuring Range 15.625 - 1000ng/mL (LOD 7.2ng/mL)

### ProteaseTag® Active Proteinase 3 Immunoassay

- Suitable for use with sputum samples
- Specifically detects increased Active Proteinase 3 with activity increasing during exacerbations in COPD and AAT
- Quantitative assay: Measuring Range 7.8 - 500ng/mL (LOD 2.35ng/mL)

### NEATstik® Neutrophil Elastase Test

- Rapid 10-minute lateral flow qualitative test
- Measures Active Neutrophil Elastase in sputum
- Complementary to the ProteaseTag® Active Neutrophil Elastase Immunoassay
- Semiquantitative readout indicating Active Neutrophil Elastase  $\geq 8\mu\text{g/mL}$
- Research respiratory disease severity, airway infection, and risk of exacerbation

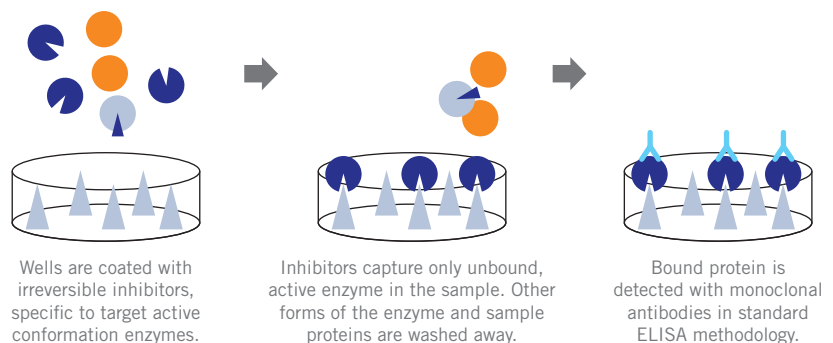
## ProteaseTag® Technology

Biological samples have:

inactive enzyme (●)

inhibitor-bound enzyme (●)

active enzyme (●)





## Novel Lung Disease Biomarkers offered by DiaPharma

Biomarker	Significance in Lung Studies	Product	Packaging	Use	Catalog #
Cytokeratin 18	Expressed in epithelial cells of the lung. Increases detected in lung damage or infection. Apoptosis assay-caspase readout.	M30 Apoptosense <sup>®</sup> CK18 ELISA Kit	Kit/96 tests	RUO	P10011
		M65 <sup>®</sup> ELISA CK18 ELISA Kit	Kit/96 tests	RUO	P10020
		M65 EpiDeath <sup>®</sup> CK18 ELISA Kit	Kit/96 tests	RUO	P10040
		M30 CytoDeath <sup>™</sup> CK18 ELISA Kit	Kit/96 tests	RUO	P10900
Periostin	Secreted by activated fibroblasts and promotes fibrosis. Correlates with pulmonary function decline and disease progression in IPF.	FluoBolt <sup>™</sup> Periostin Immunoassay Kit	Kit/96 tests	RUO	FIA-1703
Soluble CD163	Soluble macrophage marker. Increases in inflammatory conditions.	IQ Macro163 <sup>™</sup> ELISA Kit	Kit/96 tests	RUO	IQP-383
Neutrophil Elastase (NE)	Degradative enzyme released by activated neutrophils. Increases reported as indication of inflammation and tissue damage.	ProAxis ProteaseTag <sup>®</sup> NE Activity Kit	Kit/96 tests	RUO	PA001US
		ProAxis NEATstik <sup>®</sup> Rapid NE Activity Test	Box is 10 tests	RUO	PA004-10US
		ImmunoDiagnostics NE ELISA kit	Kit/96 tests	RUO	31330
Proteinase 3 (PR3)	Degradative enzyme released by activated neutrophils. Increases reported as indication of inflammation and tissue damage.	ProAxis ProteaseTag <sup>®</sup> PR3 Activity Kit	Kit/96 tests	RUO	PA008US
		ImmunoDiagnostics PR3 ELISA Kit	Kit/96 tests	RUO	31300
Alpha 1 Antitrypsin (AAT)	Inhibitor of neutrophil elastase enzyme. Decreases in AAT protein cause disease of the lung and liver. (Alpha-1 Antitrypsin Deficiency)	ImmunoDiagnostics A1AT ELISA Kit	Kit/96 tests	RUO	31420
Urokinase-type plasminogen activator (uPA)	Inflammatory and fibrinolysis marker, specific to lung tissue	Technozym <sup>®</sup> uPA Combi Actibind <sup>®</sup> ELISA Kit	Kit/96 tests	RUO	TC16010

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