

Product Specification Sheet

Anti-Protective Antigen (PA) Antibodies

Cat. # PA11-M	Mouse Monoclonal Anti-PA IgG # 1 (aff pure)	SIZE: 100 ug
Cat. # PA12-M	Mouse Monoclonal Anti-PA IgG # 2 (aff pure)	SIZE: 100 ug
Cat. # PA13-M	Mouse Monoclonal Anti-PA IgG #3 (aff pure)	SIZE: 100 ug
Cat. # PA14-M	Mouse Monoclonal Anti-PA IgG # 4 (aff pure)	SIZE: 100 ug
Cat. # PA15-M	Mouse Monoclonal Anti-PA IgG #5 (aff pure)	SIZE: 100 ug

After inhalation by mammals, *Bacillus anthracis* spores germinate in alveolar macrophages then migrate to lymph nodes where they multiply. The vegetative bacteria excrete the tripartite exotoxin which consists of three polypeptides: protective antigen (PA, 83 kDa), lethal factor (LF, 90 kDa) and oedma factor (OF, 89 kDa). The two components (OF and LF) of the toxin enzymatically modify substrates within the cytosol of the mammalian cells: The **OF** is an adenylate cyclase that impairs the host defenses through a variety of mechanisms inhibiting phagocytosis. The **LF** is a zinc dependent protease that cleaves several mitogen activated protein kinase kinases (**MAPKK**) and causes lysis of macrophages. To intoxicate mammalian cells, the third component of the toxin **PA**, binds to a ubiquitously expressed cellular receptor, Tumor Endothelium Marker-8 (**TEM8**). Upon binding to TEM8, PA is cleaved into 20 and 63kDa fragments (PA20 and PA63) by furin or furin-like proteases. PA20 dissociates into medium and allows the PA63 fragment to heptamerize and bind LF and OF of the toxin. The resulting complex of **PA63** fragment with EF and/or OF binds to PA-receptor TEM8/ATR and internalized into endosomes followed by translocation of LF and OF into cytosol of the cells.

Source of Antigen and Antibodies

Antigen	<i>B. anthracis</i> Protective Antigen (PA) (1)
Ab Host/type	Mouse, Monoclonal IgG
Ab Format	5 different clones are available as Aff pure IgGs Isotype-IgG1 (cat #PA11-13M) Isotype-IgG2b (PA14 & PA15-M)

Recommended Usage

Western Blotting (1-10 ug/ml for affinity pure antibody using ECL technique).

ELISA: Control proteins can be used to coat ELISA plates at 1 ug/ml and detected with antibodies (0.1-1 ug/ml). We recommend the following pairs for sandwich assay:

Coating: PA11-M; **Tracer:** PA12-M

Histochemistry & Immunofluorescence: Not tested.

Specificity & Cross-reactivity

Mouse monoclonal antibody (cat # **PA11-M**) does not cross-react with Lethal Factor (**LF**) of *Bacillus anthracis*, *Y. Pestis*, *F. Tularensis* and *Toxoplasma gondi*. The cross-reactivity in various species is not known. All clones recognize both PA63 and PA83. Recombinant purified proteins PA63 (Cat # PA63-R) and PA83 (Cat #PA83-R) can be used a positive controls.

General References (1) Bradley KA et al (2001) Nature 414, 225-229; liu S and Leppla SH (2002) JBC (in press); Leppla, SH (1982) PNAS 79, 3182; O'Brien J et al (1985) Infect Immun 47, 306; Duesbery, NS et al (1998) Science 280, 734

Form & Storage of Antibodies/Peptide Control

Affinity pure IgG

100 ug/100ul
solution lyophilized powder
Buffer: PBS, pH 7.4, & 0.1% sodium azide
Reconstitute powder in the original vol. of water

Storage

Short-term: unopened, undiluted vials for less than a week at 4oC.

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

Stability: 6-12 months at -20oC or below.

Shipping: 4oC for solutions and room temp for powder.

**This product is for In vitro research use only.*

Related materials available from ADI

Antibodies: ATR11-A, ATR12-A, ATR31-A

Recombinant PA63, PA83, LF, EF proteins
ELISA kits for PA83 protein, anti-pA83 kits for mouse, rabbit, g. pig, and human sera

PA11-15M-S 80911A