



A-1-Antitrypsin

IHC of Alpha-1- Antitrypsin on an FFPE Tonsil

Description Alpha-1-Antitrypsin (A1AT) is a glycoprotein generally known as serum trypsin inhibitor. Alpha-1-Antitrypsin is also referred to as alpha-1 proteinase inhibitor (A1PI) because it is a serine protease inhibitor (serpin), inhibiting a wide variety of proteases. It protects tissues from enzymes of inflammatory cells, especially elastase, and has a reference range in blood of 1.5 - 3.5 gram/liter (in the U.S. the reference range is generally expressed as mg/dL or micromoles), but the concentration can rise many fold upon acute inflammation. In its absence, elastase is free to break down elastin, which contributes to the elasticity of the lungs, resulting in respiratory complications such as emphysema, or COPD (Chronic Obstructive Pulmonary Disease) in adults and cirrhosis in adults or children.

Alpha-1-Antitrypsin is considered to be very useful in the study of inherited AAT deficiency, benign and Malignant Hepatic Tumors and Yolk-Sac Carcinomas. Positive staining for A-1-Antitrypsin may also be used in detection of benign and malignant lesions of a histiocytic nature. Sensitivity and specificity of the results have made this antibody a useful tool in the screening of patients with Cryptogenic Cirrhosis or other forms of liver disease with portal fibrosis of unknown etiology.

Antibody Type	Rabbit Polyclonal	Clone	N/A
Isotype	N/A	Reactivity	Paraffin, Frozen
Localization	Cytoplasmic	Control	Tonsil, Lymph Node
Storage	Store at 2°-8°C	Stability	2 years

For long-term storage of the concentrated antibody, it is recommended that aliquots of the antibody be frozen at -20°C in glycerol 50% (frost-free freezers are not recommended). Repeated freezing and thawing must be avoided. Dilute using an antibody diluent such as ImmunoDetector Protein Block/Antibody Diluent (BSB 0040 and BSB 0041) or ImmunoDNA Background Blocker (BSB 0103-BSB 0107).

Presentation A-1-Antitrypsin is a purified immunoglobulin fraction of rabbit antiserum that is filter sterilized and diluted in buffer pH 7.5, containing BSA and sodium azide as a preservative.

Availability	Catalog No.	Antibody Type	Dilution	Volume/QTY
	BSB 5008	Prediluted	Ready-To-Use	3.0 ml
	BSB 5009	Prediluted	Ready-To-Use	7.0 ml
	BSB 5010	Prediluted	Ready-To-Use	15.0 ml
	BSB 5011	Concentrated	1:500-1:2000	0.1 ml
	BSB 5012	Concentrated	1:500-1:2000	0.5 ml
	BSB 5013	Concentrated	1:500-1:2000	1.0 ml
	BSB 5014	Control Slides		5

Note: For concentrated antibodies, please centrifuge prior to use to ensure recovery of all product.

- References**
1. Isaacson P, et al. *Lancet*. 1979;2:964-965
 2. Palmer PE, et al. *Am J Clin Pathol*. 1974;62:350-354
 3. Palmer PE, et al. *Cancer*. 1980;45:1424-1431
 4. Kindblom LG, et al. *Hum Pathol*. 1982;13:834-840
 5. Raintoft I, et al. *Hum Pathol*. 1979,10:419-424

Protocol Suggested protocol on reverse

Recommended Immunohistochemical Protocol

- Pretreatment**
1. Cut and mount 3-4 micron formalin-fixed paraffin-embedded tissues on positive charged slides.
 2. Air dry for 2 hours at 58° C.
 3. Deparaffinize, dehydrate and rehydrate tissues.
 4. Subject tissues to heat epitope retrieval using a suitable retrieval solution such as **ImmunoDNA Retriever with Citrate** (BSB 0020-BSB 0023) or **EDTA** (BSB 0030-BSB 0033).
 5. Any of three heating methods may be used:
 - a. **Electric Pressure Cooker**
Place standoff rack at base of pressure cooker. Add 1-2 inches of distilled water to the pressure cooker and turn heat to high, and incubate for 15 minutes. Open and immediately transfer slides to room temperature.
 - b. **Water Bath Method**
Place tissues/slides in a pre-warmed staining dish or coplin jar containing the **ImmunoDNA Retriever with Citrate** or **EDTA** in a water bath set at 95°-99° C. Incubate for 30-60 minutes.
 - c. **Conventional Steamer Method**
Place tissues/slides in a pre-warmed staining dish or coplin jar containing the **ImmunoDNA Retriever with Citrate** or **EDTA** in a Steamer, cover and steam for 30-60 minutes.
 6. After heat treatment, transfer slides in **ImmunoDNA Retriever with Citrate** or **EDTA** to room temperature and let stand for 15-20 minutes.
 7. Wash slides with IHC wash buffer or DI water.
 8. Continue IHC staining protocol.

Immunohistochemical Protocol

Step	ImmunoDetector (AP or HRP)	PolyDetector (AP or HRP)
Peroxidase/AP Block	5 minutes	5 minutes
Primary Antibody	30 minutes	45 minutes
Secondary Biotinylated Link	10 minutes	Not Applicable
AP or HRP Label	10 minutes	45 minutes
Substrate-Chromogen	5-10 minutes	10 minutes
Counterstaining	Time varies with counterstain	Time varies with counterstain

