

## Sheep anti-human $\alpha_2$ Antiplasmin ( $\alpha_2$ AP)

Whole IgG from antiserum

10 mg

**Product #:** SA2AP-IG

**Lot #:** XXXX

**Expiry date:** XXXX

**Store at  $-10$  to  $-20^\circ\text{C}$**

For Research Use Only.

Not for use in diagnostic procedures.

### Description of $\alpha_2$ Antiplasmin ( $\alpha_2$ AP)

$\alpha_2$ Antiplasmin ( $\alpha_2$ AP), also known as  $\alpha_2$ Plasmin Inhibitor ( $\alpha_2$ PI), is a member of the SERPIN family of proteinase inhibitors and the primary inhibitor of the enzyme plasmin in blood. It is produced in the liver and circulates in plasma at  $\sim 70 \mu\text{g/ml}$  ( $\sim 1 \mu\text{M}$ ).  $\alpha_2$ AP is a single chain molecule with a mass of 67 kDa as determined by SDS-PAGE. The primary target enzyme for  $\alpha_2$ AP is plasmin, but  $\alpha_2$ AP also acts as secondary or "backup" inhibitor of activated F.XI, activated Protein C and trypsin. Inhibition of these enzymes by  $\alpha_2$ AP occurs through proteolytic cleavage after Arg<sup>364</sup> with subsequent rapid formation of a stable, inactive 1:1 enzyme- $\alpha_2$ AP complex.  $\alpha_2$ AP also acts to regulate fibrinolysis by binding to the lysine binding sites on plasminogen thus competitively inhibiting plasminogen binding to fibrin. About 30% of  $\alpha_2$ AP present in plasma is partially degraded and lacks a peptide in the carboxyl region that contains the plasminogen-binding site. This form of  $\alpha_2$ AP ( $\sim 65$  kDa) has a reduced rate of plasmin inhibition and has been referred to as the "slow form" of  $\alpha_2$ AP. During fibrin formation, a portion of circulating  $\alpha_2$ AP is cross-linked to the  $\alpha$ -chain of fibrin by activated factor XIII, and this linking of plasmin inhibitor to the plasmin substrate provides an additional measure of protection to the fibrin clot from proteolysis by plasmin<sup>1-4</sup>.

### REFERENCES and REVIEWS

1. Aoki N, Suni Y, Miura O, Hirosawa S; Human  $\alpha_2$ Plasmin Inhibitor; Methods in Enzymology, **223**, pp 185-197, 1993.
2. Shieh BH, Travis J; The Reactive Site of Human  $\alpha_2$ -Plasmin Inhibitor ; JBC **262**, pp 6055-6059, 1987.
3. Moroi M, Aoki N; Isolation and Characterization of  $\alpha_2$ -Plasmin Inhibitor from Human Plasma; JBC **251**, pp 5956-5965, 1976.
4. Harpel PC; Blood Proteolytic Enzyme Inhibitors: Their Role in Modulating Blood Coagulation and Fibrinolytic Enzyme Pathways; in Hemostasis and Thrombosis, eds. RW Colman, J Hirsh, VJ Marder and EW Salzman, pp. 738-747, J.B. Lippincott Co., Philadelphia PA, USA, 1982.

### Product Specifications

#### Description:

Vial containing XXXX ml of whole IgG, representing approximately 1 ml of antiserum. Total protein is 10 mg.

#### Format:

Whole IgG, clear liquid.

#### Host Animal:

Sheep

#### Immunogen:

Human  $\alpha_2$ antiplasmin purified from plasma.

#### Concentration:

IgG concentration is XXXX mg/ml, determined by absorbance using an extinction coefficient ( $E_{280}^{1\%}$ ) of 13.4.

#### Buffer:

10 mM HEPES, pH 7.4, 150 mM NaCl, 50% (v/v) glycerol.

#### Storage:

Store between  $-10$  and  $-20^\circ\text{C}$ . Product will become viscous but will not freeze. Avoid storage in frost-free freezers. Keep vial tightly capped. Allow product to warm to room temperature and gently mix before use.

#### Specificity:

This antibody is specific for  $\alpha_2$ AP as demonstrated by immunoelectrophoresis and ELISA.

#### Applications:

Suitable as a source of antibodies to human  $\alpha_2$ antiplasmin.

#### Neutralizing activity:

Not determined.

#### Species Cross Reactivity: (immunodiffusion vs. citrated plasma)

Human:	XXXX	Mouse:	XXXX	Rat:	XXXX
Rabbit:	XXXX	Pig:	XXXX	Dog:	XXXX