# Human Serpin A1/α1-Antitrypsin Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF1268

## DESCRIPTION

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|---|---|
| **Species Reactivity** | Human |
| **Specificity** | Detects human Serpin A1/α1-Antitrypsin in direct ELISAs and Western blots. In direct ELISAs, less than 5% cross-reactivity with recombinant human (rh) Serpin A3, rhSerpin A5, rhSerpin A6, rhSerpin A7, rhSerpin A11, and rhSerpin A12 is observed. |
| **Source** | Polyclonal Goat IgG |
| **Purification** | Antigen Affinity-purified |
| **Immunogen** | Mouse myeloma cell line NS0-derived recombinant human Serpin A1/α1-Antitrypsin<br>Glu25-Lys418<br>Accession # P01009 |
| **Formulation** | Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.<br>*Small pack size (-SP) is supplied either lyophilized or as a 0.2 μm filtered solution in PBS. |

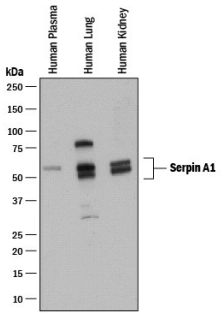
## APPLICATIONS

**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.*

| | Recommended Concentration | Sample |
|---|---|---|
| **Western Blot** | 0.1 µg/mL | See Below |
| **Immunocytochemistry** | 5-15 µg/mL | See Below |
| **Immunoprecipitation** | 25 µg/mL | Conditioned cell culture medium spiked with Recombinant Human Serpin A1/α1-Antitrypsin (Catalog # 1268-PI), see our available Western blot detection antibodies |
| **Simple Western** | 10 µg/mL | See Below |
| **Knockout Validated** | Serpin A1 is specifically detected in HepG2 human hepatocellular carcinoma parental cell line but is not detectable in Serpin A1 knockout HepG2 cell line. | |

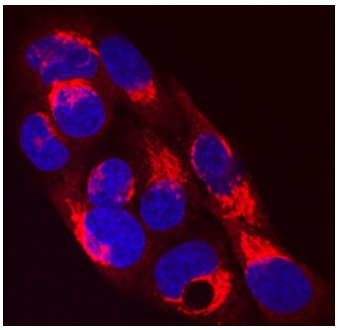
## DATA

### Western Blot



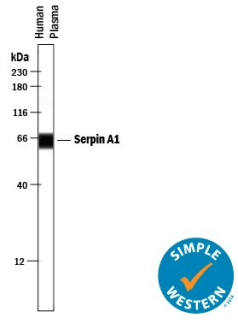

**Detection of Human Serpin A1/α1-Antitrypsin by Western Blot.** Western blot shows human plasma and lysates of human lung tissue and human kidney tissue. PVDF membrane was probed with 0.1 µg/mL of Goat Anti-Human Serpin A1/α1-Antitrypsin Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1268) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF017). Specific bands were detected for Serpin A1/α1-Antitrypsin at approximately 50-60 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

### Immunocytochemistry



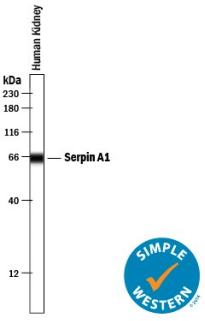
**Serpin A1/α1-Antitrypsin in HepG2 Human Cell Line.** Serpin A1/α1-Antitrypsin was detected in immersion fixed HepG2 human hepatocellular carcinoma cell line using Goat Anti-Human Serpin A1/α1-Antitrypsin Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1268) at 10 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Goat IgG Secondary Antibody (red; Catalog # NL001) and counterstained with DAPI (blue). Specific staining was localized to cytoplasm. View our protocol for Fluorescent ICC Staining of Cells on Coverslips.

### Simple Western




**Detection of Human Serpin A1/α1-Antitrypsin by Simple Western™.** Simple Western lane view shows human plasma, loaded at 0.2 mg/mL. A specific band was detected for Serpin A1/α1-Antitrypsin at approximately 62 kDa (as indicated) using 10 µg/mL of Goat Anti-Human Serpin A1/α1-Antitrypsin Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1268) . This experiment was conducted under reducing conditions and using the 12-230 kDa separation system.

### Simple Western




**Detection of Human Serpin A1/α1-Antitrypsin by Simple Western™.** Simple Western lane view shows lysates of human kidney tissue, loaded at 0.2 mg/mL. A specific band was detected for Serpin A1/α1-Antitrypsin at approximately 65 kDa (as indicated) using 1 µg/mL of Goat Anti-Human Serpin A1/α1-Antitrypsin Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1268) . This experiment was conducted under reducing conditions and using the 12-230 kDa separation system.



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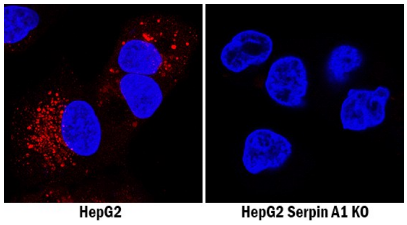
# Human Serpin A1/α1-Antitrypsin Antibody

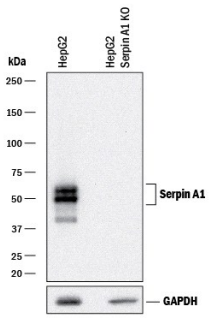
Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF1268

**Knockout Validated**




**Serpin A1/α1-Antitrypsin Specificity is Shown by Immunocytochemistry in Knockout Cell Line.** Serpin A1/α1-Antitrypsin was detected in immersion fixed HepG2 human hepatocellular carcinoma cell line but is not detected in Serpin A1/α1-Antitrypsin knockout (KO) HepG2 cell line using Goat Anti-Human Serpin A1/α1-Antitrypsin Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1268) at 9 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Goat IgG Secondary Antibody (red; Catalog # NL001) and counterstained with DAPI (blue). Specific staining was localized to cytoplasm. View our protocol for Fluorescent ICC Staining of Cells on Coverslips.

**Knockout Validated**




**Western Blot Shows Human Serpin A1/α1-Antitrypsin Specificity by Using Knockout Cell Line.** Western blot shows lysates of HepG2 human hepatocellular carcinoma parental cell line and Serpin A1/α1-Antitrypsin HepG2 knockout cell line (KO). PVDF membrane was probed with 0.25 µg/mL of Goat Anti-Human Serpin A1/α1-Antitrypsin Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1268) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF017). Specific bands were detected for Serpin A1/α1-Antitrypsin at approximately 45-55 kDa (as indicated) in the parental HepG2 cell line, but is not detectable in knockout HepG2 cell line. GAPDH (Catalog # AF5718) is shown as a loading control. This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

## PREPARATION AND STORAGE

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|---|---|
| **Reconstitution** | Reconstitute at 0.2 mg/mL in sterile PBS. |
| **Shipping** | The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.<br>*Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C |
| **Stability & Storage** | **Use a manual defrost freezer and avoid repeated freeze-thaw cycles.**<br>● 12 months from date of receipt, -20 to -70 °C as supplied.<br>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.<br>● 6 months, -20 to -70 °C under sterile conditions after reconstitution. |

## BACKGROUND

Serpin A1 is the archetypal member of the Serpin superfamily of the serine protease inhibitors (1). As one of the most abundant proteinase inhibitors in the circulation, it is synthesized in the liver and secreted into the bloodstream with the major function to protect tissues against neutrophil elastase. A severe serpin A1 deficiency leads to several clinical complications such as pulmonary emphysema, juvenile hepatitis, cirrhosis, and hepatocellular carcinoma (2). The deficiency is caused by point mutations in naturally occurring serpin A1 variants (over 70 are known). For example, the Z variant (Glu342 to Lys) forms intracellular inclusion bodies, is not secreted, and leads to a severe serpin A1 deficiency (3).

**References:**

1. Silverman, G.A. *et al.* (2001) J. Biol. Chem. **276**:33293.
2. Barbour, K.W. *et al.* (2002) Genomics **80**:515.
3. Lomas, D.A. *et al.* (2002) Biochem. Soc. Trans. **30**:89.



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