# Recombinant Human Serpin A6

Catalog Number: 9580-PI

## DESCRIPTION

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| **Source** | Mouse myeloma cell line, NS0-derived human Serpin A6 protein<br>Met23-Val405, with a C-terminal 6-His tag<br>Accession # AAH56259.1 |
| **N-terminal Sequence Analysis** | Met23 |
| **Predicted Molecular Mass** | 43 kDa |

## SPECIFICATIONS

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| **SDS-PAGE** | 50-70 kDa, reducing conditions |
| **Activity** | Measured by its binding ability in a functional ELISA.<br>When Cortisol-BSA Conjugate is immobilized at 5 µg/mL, 100 µL/well, Recombinant Human Serpin A6 binds with an $ED_{50}$ of 1.5-7.5 µg/mL. |
| **Endotoxin Level** | <0.10 EU per 1 µg of the protein by the LAL method. |
| **Purity** | >95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining. |
| **Formulation** | Lyophilized from a 0.2 µm filtered solution in Tris, NaCl and Trehalose. See Certificate of Analysis for details. |

## PREPARATION AND STORAGE

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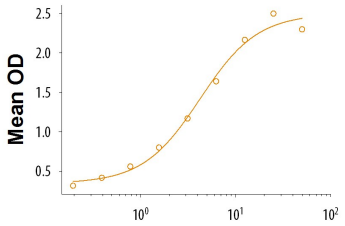
| **Reconstitution** | Reconstitute at 1 mg/mL in water. |
| **Shipping** | The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below. |
| **Stability & Storage** | **Use a manual defrost freezer and avoid repeated freeze-thaw cycles.**<br>• 12 months from date of receipt, -20 to -70 °C as supplied.<br>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.<br>• 3 months, -20 to -70 °C under sterile conditions after reconstitution. |

## DATA

**Bioactivity**




**Recombinant Human Serpin A6 Protein Bioactivity** When Cortisol-BSA Conjugate is immobilized at 5 µg/mL, 100 µL/well, Recombinant Human Serpin A6 (Catalog # 9580-PI) binds with an $ED_{50}$ of 1.5-7.5 µg/mL.

## BACKGROUND

Corticosteroid-binding globulin (CBG), also known as Serpin A6, is an approximately 42 kDa member of the serpin superfamily of serine protease inhibitors. CBG belongs to the clade A subgroup of serpins which include inflammatory response molecules (1). Human CBG shares 57% sequence identity to mouse CBG. CBG is one of two serpins known to bind and transport hormones. CBG is responsible for binding ~90% of cortisol in a reversible manner to regulate levels under normal physiological states (2). However, cleavage of CBG's reactive site loop by proteases present during an inflammatory response leads to a targeted and immediate release of the anti-inflammatory steroid, cortisol, from CBG (3). Reduced cleavage of CBG is implicated in the inflammatory phenotype seen in obesity, metabolic syndrome, and rheumatoid arthritis (4, 5). Cleavage of CBG can be modulated by glycosylation (6). Naturally occurring mutations of CBG lead to abnormal levels or function (7, 8). Loss of functional CBG results in low cortisol levels in patients experiencing chronic pain, fatigue, hypotension and excess weight (8).

**References:**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