Recombinant Mouse Serum Amyloid A2

Catalog Number: 8478-SA

DESCRIPTION

Source	*E. coli*-derived mouse Serum Amyloid A2 protein Gly20-Tyr122 Accession # P05367
N-terminal Sequence Analysis	Gly20
Predicted Molecular Mass	12 kDa

SPECIFICATIONS

SDS-PAGE	11 kDa, reducing conditions
Activity	Measured by its ability to induce TNF-α secretion by J774A.1 mouse reticulum cell sarcoma macrophage cells. The ED_{50} for this effect is 1.5-7.5 µg/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>85%, 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. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 250 µg/mL in sterile water.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Mouse Serum Amyloid A2 (SAA2) is a multifunctional apolipoprotein produced by hepatocytes in response to pro-inflammatory cytokines (1, 2). It is secreted as a 12 kDa, non-glycosylated protein and circulates as part of the HDL complex (3, 4). The SAA2 gene is one of five SAA genes in mouse (5). SAA2 and SAA1 are categorized as acute phase (A)-SAA proteins based on their structural similarity and inducible expression during chronic inflammation. Mature mouse SAA2 shares 70% amino acid (aa) sequence identity with human SAA2 and 92% sequence identity with mouse SAA1. Secretion of SAA2 is increased during inflammation with amounts of total A-SAA increasing up to 1000-fold (6, 7). Increased levels of A-SAA in serum are indicative of inflammatory disease (8). When highly expressed, SAA can displace ApoA1 as the major apolipoprotein in HDL complexes, weakening the function of HDL as a reverse (lipid clearing) cholesterol transporter (2). A highly charged region of SAA2 and SAA1 (aa 36-68) contains putative fibronectin- and laminin-binding motifs (5). This region also binds heparin sulfate proteoglycans at mildly acidic pH and promotes aggregation of A-SAA (9, 10). Persistent production of A-SAA results in amyloid A amyloidosis, a chronic inflammatory condition that culminates in renal failure (10-12). Amyloidosis is triggered by tissue damage, infection, or other insults that result in prolonged inflammatory cytokine activity. SAA2 selectively accumulates in amyloid fibril deposits during amyloidosis. Circulating levels of total A-SAA decrease during active amyloidosis due to the sequestration of SAA2 into amyloid depositions (13, 14). Mouse strains can differ in SAA sequence, expression and amyloid formation (15).

References:

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