Serum Amyloid A ELISA Kit | SAA elisa kit

Serum Amyloid A (SAA)

CATALOG #
AAA14620

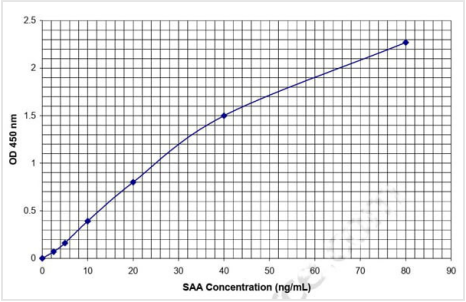
PRODUCT SYNONYMS

Serum Amyloid A; Serum Amyloid A (SAA); SAA elisa kit

PRODUCT SPECIFICATIONS

Specificity	This ELISA recognises both natural and recombinant human SAA. This kit exhibits no detectable cross-reactivity with human; IL-8, IL-1beta, MCAF, FGF, TGF-beta, EGF, GMCSF, M-CSF, MCP-3, TNF-alpha, RANTES, and EPO.
Sequence Length	129
Assay Type	Quantitative Sandwich
Samples	Serum, plasma, cell culture supernatant and other biological fluids
Intra-assay Precision	To detemine within-run precision, three different samples of known concentration were assayed by using 20 replicates in 1 assay.
Inter-assay Precision	To determine between-run precision, three different samples of known concentration were assayed by replicates on 16-20 different assays.

IMAGES



Standard Curve (Sample)

ADDITIONAL INFORMATION

Related Product Information for SAA elisa kit

Background: Serum Amyloid A (SAA) is an acute-phase protein. During acute events, the rise in SAA levels is the most rapid and intense increase of all acute phase proteins. Cytokines such as IL-1, IL-6, and TNF are considered mediators of SAA protein synthesis. They stimulate hepatocytes in the liver to produce and release SAA into the bloodstream. When elevated above normal levels SAA is almost exclusively bound to High Density Lipoproteins (HDL), causing SAA to behave like an apolipoprotein - a protein moiety occurring in plasma lipoprotiens. SAA circulates at trace levels (1-5 ug/mL) during normal conditions; however 4-6 hours after inflammatory stimulus, SAA levels can increase by as much as 1000 fold to remarkably elevated levels (500-1000 ug/mL), thus making SAA a sensitive marker. 1,2 Structural analysis revealed this 104 amino acid (a.a.) polypeptide in its native state has a molecular mass of 12-14 kDa. Serum amyloid A is the serum precursor of amyloid A (AA) protein (8.5 kDa), which is formed when the first 76 a.a.'s of SAA are cleaved. The human SAA protein is polymorphic being made up of a family of several related proteins (SAA1 to SAA4). SAA genes are located on chromosome 11p.1 SAA1 and SAA2 are similar genes, which differ by 7 amino acids or more, and encode acute-phase SAA's. SAA3 appears to be a pseudogene and is substantially different from the others. SAA4 does not vary significantly during the acute phase response and is an isoform that is present on HDL during homeostasis.3,4 Each of the acute phase proteins have a unique function in modulating host immune responses but the role of SAA remains unclear. It is known that HDL inhibits SAA's function. This suggests that SAA needs to be released from HDL complexes in order to become active.5 Recently it was reported that SAA may have an important pro-inflammatory and immunostimulating role by recruiting neutrophils, monocytes, and T-lymphocytes into inflammatory lesions.5,6 As a result of SAA's association with HDL, a role in cholesterol metabolism has been proposed. SAA, after dissociation from HDL, may play a role in cholesterol transport at local tissues sites during inflammation by binding cholesterol.2,7 High levels of SAA can be seen in patients with acute and chronic inflammation. Secondary amyloidosis may develop as a result prolonged or repeated inflammatory conditions in which SAA levels remain elevated. This progressive, fatal condition is characterized by a gradual loss of organ function, in which fibrils are deposited in peripheral tissues and major organs. The fibrils are caused by the incomplete degradation of SAA in which the AA fragment (8.5 kDa) from the original SAA protein has been enzymatically cleaved. Measuring SAA levels in these patients may be a useful indicator of degree of inflammation and response to therapy. Inflammatory disorders such as rheumatoid arthritis, juvenile arthritis, ankylosing spondylitis, familial mediterranean fever, progressive sclerosis as well as chronic infections such as tuberculosis and osteomyelitis are predisposed to developing amyloidosis.8,9 Measuring SAA levels is also significant in determining pulmonary inflammation in patients with cystic fibrosis,10 diagnosing and predicting renal allograft rejection,11 determining anti-microbial therapy response in urinary tract infections,12 opportunistic infections in AIDS,13 inflammation in acute viral infections,14 biocompatiblility of hemodialysis,15 tissue damage in post-acute myocardial infarction, 17 and the outcome in severe unstable angina.16 Also, a differential diagnosis of inflammatory disease may be employed by measuring SAA levels. Acute viral infections may be distinguished from bacterial infections by determining SAA levels.14-17 It may be useful to confirm diagnosis of acute viral diseases if SAA is assayed at the same time as C-reactive protein, which is a useful inflammatory marker for bacterial infections and does not rise during viral disease.16This SAA ELISA is a 2.5-hour solid phase immunoassay readily applicable to measure SAA in serum, plasma, cell culture supernatant, and other biological fluids in the range of 0 to 80 ng/mL. It showed no cross reactivity with other cytokines tested. This SAA ELISA is expected to be effectively used for further investigations into the relationship between SAA and the various conditions mentioned.

Principle of the Assay: This SAA enzyme-linked immunosorbent assay (ELISA) applies a technique called quantitative sandwich immunoassay. The microtiter plate provided in this kit has been pre-coated with a monoclonal antibody specific for SAA. Standards or samples are then added to the appropriate microtiter plate wells and incubated. SAA if present, will bind and become immobilized by the antibody pre-coated on the wells. The microtiter plate wells are thoroughly washed to remove any unbound SAA and other components of sample. In order to quantitate the amount of SAA present in the sample, a standardized preparation of horseradish peroxidase (HRP)-conjugated monoclonal antibody specific for SAA is added to each well to "sandwich" the SAA immobilized during the first incubation. The microtiter plate then undergoes a second incubation. The wells are thoroughly washed to remove all unbound HRP-conjugated antibodies and a TMB (3,3'5,5' tetramethyl-benzidine) substrate solution is added to each well. The enzyme (HRP) and substrate solution are allowed to react over a short incubation period. Only those wells that contain SAA and enzyme-substrate reaction will exhibit a change in colour. The enzyme-substrate reaction is terminated by the addition of sulphuric acid solution and the colour change measured spectrophotometrically at a wavelength of 450 nm ± 2 nm. In order to measure the concentration of SAA in the samples, this kit includes two calibration diluents (Calibrator Diluent I for serum/plasma testing and Calibrator Diluent II for cell culture supernatant testing). According to the testing system, the provided standard is diluted (2-fold) with the appropriate Calibrator Diluent and assayed at the same time as the samples. This allows the operator to produce a standard curve of Optical Density (O.D) versus SAA (ng/mL). The concentration of SAA in the samples is then determined by comparing the O.D. of the samples to the standard curve.

Intended Uses: This Human SAA ELISA Kit is to be used for the in vitro quantitative determination of human serum amyloid A (SAA) concentrations in serum, plasma, cell culture supernatant, and other biological fluids. This kit is intended FOR LABORTORY RESEARCH USE ONLY and is not for use in diagnostic or therapeutic procedures.

Product Categories/Family for SAA elisa kit	ELISA Kits for Human Inflammatory and Autoimmune Conditions

NCBI AND UNIPROT INFORMATION

NCBI GI #	93352563
NCBI GeneID	678660
NCBI Accession #	NP_001035288.1
NCBI GenBank Nucleotide #	NM_001040198.1
NCBI Official Full Name	serum amyloid A protein
NCBI Official Symbol	SAA1
NCBI Official Synonym Symbols	SAA
NCBI Protein Information	serum amyloid A protein

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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