Datasheet for ABIN2344959

OxiSelect™ AOPP Assay Kit (200 assays)

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Overview

Quantity:	200 tests
Reactivity:	Human
Application:	Biochemical Assay (BCA)

Product Details

Purpose:	The Advanced Oxidation Protein Products (AOPP) Assay Kit is a bioassay tool for the direct quantitative measurement of AOPPs in biological samples.
Brand:	OxiSelect™
Sample Type:	Cell Lysate, Serum, Plasma
Analytical Method:	Quantitative
Characteristics:	The OxiSelect™ AOPP Assay Kit offers a simple, reproducible, and consistent system for the detection of advanced oxidation protein products in plasma, lysates, and tissue homogenates. This kit includes a Chloramine standard and an AOPP Human Serum Albumin conjugate for use as a positive control. Each kit provides sufficient reagents to perform 200 tests including standard curve and unknown samples.
Components:	1. Chloramine Standard : One 20 µL tube of 100 mM Chloramine. 2. Chloramine Reaction Initiator : One 1.0 g bottle of powder. 3. Stop Solution : One 5 mL bottle. 4. 10X Assay Diluent : One 20 mL bottle. Box 2 (shipped on blue ice packs)
Material not included:	1. Protein samples such as purified protein, plasma, serum, cell lysates 2. Microcentrifuge and conical tubes

Product Details

3. Centrifuge
4. Container for preparing diluted solutions
5. Adjustable single channel micropipettes with disposable tips
6. Adjustable multichannel micropipette with disposable tips
7. Spectrophotometric microplate reader capable of reading at 340nm
8. 1X PBS

Target Details

Background:	Oxidative stress is defined as an increase in the production of reactive oxygen species (ROS) due to an imbalance between antioxidant and oxidants. Advanced Oxidation Protein Products (AOPP) are uremic toxins created during oxidative stress through the reaction of chlorinated oxidants, such as chloramines and hypochlorous acid, with plasma proteins. AOPPs are structurally similar to Advanced Glycation End-Product (AGE) proteins and exert similar biological activities. AOPPs are elevated in patients with renal complications, atherosclerosis, diabetes mellitus, systemic sclerosis, as well as HIV- positive patients. Human Serum Albumin (HSA) treated with HOCl and AOPP generated in vivo can ignite oxidative reactions in both neutrophils and monocytes, which indicates both can be used as true mediators of inflammation. Although the mechanisms of AOPP degradation and elimination from the blood remain to be fully elucidated, it appears that the liver and spleen are mostly responsible for their isolation and removal. The AOPP Assay has provided relevant information concerning free radical activity in many uremic associated disease states and the measurement of anti-oxidant characteristics of many compounds. The rapid and easy protocol has been modified by researchers in the evaluation of plasma and tissue samples. The AOPP-HSA concentration was determined from a Chloramine equivalence standard.

Application Details

Application Notes:	Optimal working dilution should be determined by the investigator.
Comment:	• Measure AOPP formation in cell lysates, tissue homogenates, or plasma • Obtain results in less than 30 minutes • Quantify results on a standard microplate reader
Protocol:	The unknown AOPP-containing samples or Chloramine standards are first mixed with an assay reaction initiator that begins a color development process. After a brief incubation, a stop solution is added and the samples and standards can be read with a standard colorimetric plate reader. The AOPP content in unknown samples is determined by comparison with the predetermined Chloramine standard curve.

Application Details

Reagent Preparation:	• 1X Assay Diluent: Dilute the 10X Assay Diluent 1:10 with distilled or deionized water. • Chloramine Reaction Initiator: Weigh out enough AOPP Reaction Initiator for a 200 mg/mL solution. Dissolve the powder in distilled or deionized water. Prepare only enough for the desired number of tests (eg. 100 mg dissolved in a final volume of 0.5 mL is enough to run 50 tests). It is recommended that the AOPP-HSA Positive Control be performed in duplicate each time the assay is used. Note: The Chloramine Reaction Initiator solution is stable for 24-48 hours. Do not store or reuse diluted solutions. • AOPP-HSA Positive Control: Immediately before use, dilute an appropriate amount of the AOPP-HSA Positive Control 1:20 with 1X Assay Diluent. 3
Assay Procedure:	1. Prepare samples as desired. Samples such as plasma can be diluted in 1X Assay Diluent or PBS. 2. Prepare and mix all reagents thoroughly before use. Each AOPP-containing sample, the AOPP- HSA Positive Control, and Chloramine standards should be assayed in duplicate. High content AOPP samples can be further diluted for optimal analysis. 3. Add 200 µL of samples or standards to separate wells of the microtiter plate. 4. Add 10 µL of Chloramine Reaction Initiator to each well. Mix thoroughly and incubate on a table top rotator or shaker for 5 minutes. 5. Add 20 µL of Stop Solution to each well. Mix thoroughly. 6. Read the absorbance of each well immediately on a spectrophotometric plate reader using 340 nm as the primary wave length. Use the 0µM Chloramine standard as an absorbance blank.
Restrictions:	For Research Use only

Handling

Storage:	4 °C/-20 °C
Storage Comment:	Upon receipt, store the AOPP-HSA positive control at -20°C. Store all other components at 4°C.

Publications

Product cited in:	Huemer, Carvalho, Brum, Ünal, Coskun, Weisfeld-Adams, Schrager, Scholl-Bürgi, Schlune, Donner, Hersberger, Gemperle, Riesner, Ulmer, Häberle, Karall: "Clinical phenotype, biochemical profile, and treatment in 19 patients with arginase 1 deficiency." in: **Journal of inherited metabolic disease**, Vol. 39, Issue 3, pp. 331-40, (2016) (PubMed). Gradinaru, Margina, Borsa, Ionescu, Ilie, Costache, Dinischiotu, Prada: "Adiponectin: possible link between metabolic stress and oxidative stress in the elderly." in: **Aging clinical and experimental research**, (2016) (PubMed).

Publications

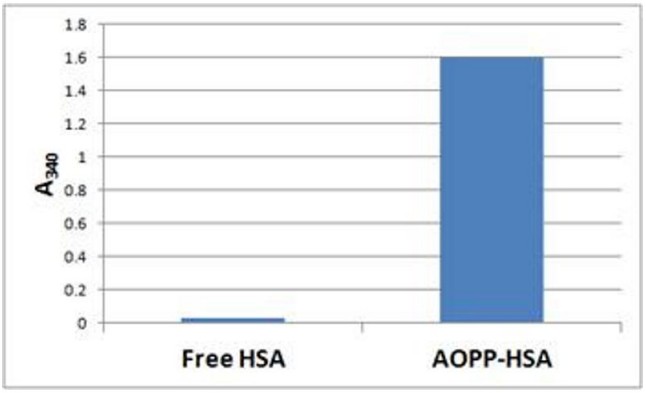
Xie, Xia, Qiao, Shi, Le: "Effect of GABA on oxidative stress in the skeletal muscles and plasma free amino acids in mice fed high-fat diet." in: **Journal of animal physiology and animal nutrition**, Vol. 99, Issue 3, pp. 492-500, (2015) (PubMed).

Witthaus, Nipa, Yang, Li, Lerner, Azadzoi: "Bladder oxidative stress in sleep apnea contributes to detrusor instability and nocturia." in: **The Journal of urology**, Vol. 193, Issue 5, pp. 1692-9, (2015) (PubMed).

Šari?, Brzovi? Šari?, Barberi?, Predovi?, Rumenjak, Cerovski: "Oxidative stress impact on growth hormone secretion in the eye." in: **Croatian medical journal**, Vol. 56, Issue 4, pp. 326-33, (2015) (PubMed).

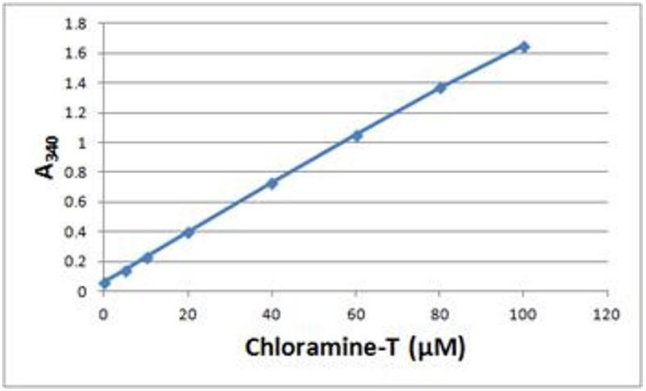
There are more publications referencing this product on: Product page

Images



Cytotoxicity Test

Image 1. Chloramine Standard Curve Generated with the OxiSelect™ AOPP Assay Kit.



Cytotoxicity Test

Image 2. AOPP-HSA Positive Control. Positive control and untreated HSA were both prepared at a concentration of 100 µM and tested according to the assay protocol.