Datasheet for ABIN5564635

Aldosterone ELISA Kit

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Overview

Quantity:	96 tests
Target:	Aldosterone (ALD)
Reactivity:	Chemical
Method Type:	Competition ELISA
Detection Range:	0.059-15 ng/mL
Minimum Detection Limit:	0.059 ng/mL
Application:	ELISA

Product Details

Purpose:	The AssayMax™ Aldosterone ELISA (Enzyme-Linked Immunosorbent Assay) Kit is designed for detection of aldosterone in plasma, serum, milk, urine, saliva, and cell culture samples. This assay employs a quantitative competitive enzyme immunoassay technique that measures aldosterone in appoximately 3 hours. A polyclonal antibody specific for aldosterone has been pre-coated onto a 96-well microplate with removable strips. Aldosterone in standards and samples is competed with a biotinylated aldosterone steroid sandwiched by the immobilized antibody and streptavidin-peroxidase (SP) conjugate. All unbound material is washed away and a peroxidase enzyme substrate is added. The color development is stopped and the intensity of the color is measured. Aldosterone ELISA Kit Catalog No. EA1101-1 Sample insert for reference use only 2
Brand:	AssayMax™
Sample Type:	Cell Culture Cells, Milk, Plasma, Saliva, Serum, Urine
Analytical Method:	Quantitative

Product Details

Detection Method:	Colorimetric
Components:	Aldosterone Microplate: A 96-well polystyrene microplate (12 strips of 8 wells) coated with a polyclonal antibody against aldosterone. Sealing Tapes: Each kit contains 3 precut, pressure sensitive sealing tapes that can be cut to fit the format of the individual assay. Aldosterone Standard: Aldosterone in a buffered protein base (12 ng, lyophilized). Biotinylated Aldosterone Steroid (1x): Lyophilized. EIA Diluent Concentrate (10x): A 10-fold concentrated buffered protein base (20 ml). Wash Buffer Concentrate (20x): A 20-fold concentrated buffered surfactant (30 ml). SP Conjugate (100x): A 100-fold concentrate (80 l). Chromogen Substrate (1x): A stabilized peroxidase chromogen substrate tetramethylbenzidine (8 ml). Stop Solution (1x): A 0.5 N hydrochloric acid solution to stop the chromogen substrate reaction (12 ml).
Material not included:	Microplate reader capable of measuring absorbance at 405 nm. Pipettes (1-20 µL, 20-200 µL, and multiple channel). Deionized or distilled reagent grade water Incubator (37 °C)

Target Details

Target:	Aldosterone (ALD)
Alternative Name:	Aldosterone (ALD Products)
Target Type:	Hormone
Background:	Aldosterone is a mineralocorticoid hormone produced by aldosterone synthase in the zona glomerulosa of the adrenal cortex. Aldosterone binds to mineralocorticoid receptors (MR): MR-aldosterone complexes regulate the expression of genes involved in the retention of sodium, the secretion of potassium, and water reabsorption, all of which may result in increased blood pressure. Aldosterone acts on MR on principal cells in the distal tubule of the kidney nephron, increasing the permeability of their apical (luminal) membrane to potassium and sodium that activates their basolateral Na+/K+ pumps, and stimulating ATP hydrolysis which leads to phosphorylation of the pump, a conformational change in the pump exposes the sodium ions to the outside. The phosphorylated form of the pump has a low affinity for sodium ions, hence reabsorbing sodium ions and water into the blood and secreting potassium ions into the urine. Aldosterone stimulates H+ secretion by intercalated cells in the collecting duct, regulating plasma bicarbonate (HCO3-) levels and its acid/base balance. Aldosterone may act on the central nervous system via the posterior pituitary gland to release vasopressin (ADH), which serves to conserve water by direct actions on renal tubular resorption (1-2).

Application Details

Plate:	Pre-coated
Protocol:	• Step 1. Add 25 µL of Standard or Sample and 25 µL of Biotinylated Steroid per well. Incubate 2 hours. • Step 2. Wash, then add 50 µL of SP Conjugate per well. Incubate 30 minutes. • Step 3. Wash, then add 50 µL of Chromogen Substrate per well. Incubate 12 minutes. • Step 4. Add 50 µL of Stop Solution per well. Read at 450 nm immediately.
Reagent Preparation:	Freshly dilute all reagents and bring all reagents to room temperature before use. EIA Diluent Concentrate (10x): If crystals have formed in the concentrate, mix gently until the crystals have completely dissolved. Dilute the EIA Diluent Concentrate 10-fold with reagent grade water to produce a 1x solution. Store for up to 30 days at 2-8 °C. Aldosterone Standard: Reconstitute the Aldosterone Standard (12 ng) with 0.8 mL of EIA Diluent to generate a 15 ng/mL standard stock solution. Allow the vial to sit for 10 minutes with gentle agitation prior to making dilutions. Prepare duplicate or triplicate standard points by serially diluting from the standard stock solution (15 ng/mL) 4-fold with EIA Diluent to produce 3.75, 0.938, 0.234, and 0.059 ng/mL solutions. EIA Diluent serves as the zero standard (0 ng/mL). Any remaining stock solution should be stored at -20 °C and used within 30 days. Avoid repeated freeze-thaw cycles. Standard Point Dilution [Aldosterone] (ng/mL) P1 1 part Standard (15 ng/mL) 15 P2 1 part P1 + 3 parts EIA Diluent 3.75 P3 1 part P2 + 3 parts EIA Diluent 0.938 P4 1 part P3 + 3 parts EIA Diluent 0.234 P5 1 part P4 + 3 parts EIA Diluent 0.059 P6 EIA Diluent 0.0 5 Biotinylated Aldosterone Steroid (1x): Reconstitute the Biotinylated Aldosterone Steroid with 4 mL of EIA Diluent to produce a working stock solution. Allow the vial to sit for 10 minutes with gentle agitation prior to use. Any remaining stock solution should be stored at -20 °C and used within 30 days. Avoid repeated freeze-thaw cycles. Wash Buffer Concentrate (20x): If crystals have formed in the concentrate, mix gently until the crystals have completely dissolved. Dilute the Wash Buffer Concentrate 20-fold with reagent grade water to produce a 1x solution. SP Conjugate (100x): Spin down the SP Conjugate briefly and dilute the desired amount of the conjugate 100-fold with EIA Diluent to produce a 1x solution. The undiluted conjugate should be stored at -20 °C.
Sample Collection:	Plasma: Collect plasma using one-tenth volume of 0.1 M sodium citrate as an anticoagulant. Centrifuge samples at 3000 x g for 10 minutes and collect plasma. A 2-fold sample dilution is suggested into EIA Diluent, however, user should determine optimal dilution factor depending on application needs. The undiluted samples can be stored at -20 °C or below for up to 3 months. Avoid repeated freeze-thaw cycles (EDTA or Heparin can also be used as an anticoagulant). Serum: Samples should be collected into a serum separator tube. After clot formation, centrifuge samples at 3000 x g for 10 minutes and remove serum. A 2-fold sample

	dilution is suggested into EIA Diluent, however, user should determine optimal dilution factor depending on application needs. The undiluted samples can be stored at -20 °C or below for up to 3 months. Avoid repeated freeze-thaw cycles. Milk: Collect milk using sample tube. Centrifuge samples at 800 x g for 10 minutes. The sample is suggested for use at 1x, however, user should determine optimal dilution factor depending on application needs. The undiluted samples can be stored at -20 °C or below for up to 3 months. Avoid repeated freeze-thaw cycles. Urine: Collect urine using sample pot. Centrifuge samples at 800 x g for 10 minutes. The sample is suggested for use at 1x, however, user should determine optimal dilution factor depending on application needs. The undiluted samples can be stored at -20 °C or below for up to 3 months. Avoid repeated freeze-thaw cycles. Saliva: Collect saliva using sample tube. Centrifuge samples at 800 x g for 10 minutes. The sample is suggested for use at 1x, however, user should determine optimal dilution factor depending on application needs. The undiluted samples can be stored at -20 °C or below for up to 3 months. Avoid repeated freeze-thaw cycles. Cell Culture Supernatants: Centrifuge cell culture media at 3000 x g for 10 minutes at 4 °C to remove debris and collect supernatants. Samples can be stored at -20 °C or below. Avoid repeated freeze-thaw cycles.
Assay Procedure:	Prepare all reagents, standard solutions, and samples as instructed. Bring all reagents to room temperature before use. The assay is performed at room temperature (20-25 °C). Remove excess microplate strips from the plate frame and return them immediately to the foil pouch with desiccants inside. Reseal the pouch securely to minimize exposure to water vapor and store in a vacuum desiccator. Add 25 l of Aldosterone Standard or sample to each well, and immediately add 25 l of Biotinylated Aldosterone Steroid to each well (on top of the standard or sample). Gently tap plate to ensure thorough mixing. Break any bubbles that may have formed. Cover wells with a sealing tape and incubate for 2 hours. Start the timer after the last addition. Wash five times with 200 l of Wash Buffer manually. Invert the plate each time and decant the contents, hit 4-5 times on absorbent material to completely remove the liquid. If using a machine, wash six times with 300 l of Wash Buffer and then invert the plate, decanting the contents, hit 4-5 times on absorbent material to completely remove the liquid. Add 50 l of SP Conjugate to each well. Gently tap plate to thoroughly coat the wells. Break any bubbles that may have formed. Cover wells with a sealing tape and incubate for 30 minutes. Turn on the microplate reader and set up the program in advance. Wash the microplate as described above. Add 50 l of Chromogen Substrate to each well. Gently tap plate to thoroughly coat the wells. Break any bubbles that may have formed. Incubate for 12 minutes or until the optimal blue color density develops. Add 50 l of Stop Solution to each well. The color will change from blue to yellow. Gently tap plate to ensure thorough mixing. Break any bubbles that may have formed.

Application Details

	6 Read the absorbance on a microplate reader at a wavelength of 450 nm immediately. If wavelength correction is available, subtract readings at 570 nm from those at 450 nm to correct optical imperfections. Otherwise, read the plate at 450 nm only. Please note that some unstable black particles may be generated at low concentration points after stopping the reaction for about 10 minutes, which will reduce the readings.
Calculation of Results:	• Calculate the mean value of the duplicate or triplicate readings for each standard and sample. • To generate a standard curve, plot the graph using the standard concentrations on the x-axis and the corresponding mean 450 nm absorbance (OD) on the y-axis. The best-fit line can be determined by regression analysis using log-log or four-parameter logistic curve-fit. • Determine the unknown sample concentration from the standard curve and multiply the value by the dilution factor.
Restrictions:	For Research Use only

Handling

Handling Advice:	This product is for Research Use Only and is not intended for use in diagnostic procedures. Prepare all reagents (diluent buffer, wash buffer, standard, biotinylated steroid, and SP conjugate) as instructed, prior to running the assay. Prepare all samples prior to running the assay. The dilution factors for the samples are suggested in this insert. However, the user should determine the optimal dilution factor. Spin down the SP conjugate vial before opening and using contents. The Stop Solution is an acidic solution. The kit should not be used beyond the expiration date.
Storage:	4 °C,-20 °C
Storage Comment:	Upon arrival, immediately store components of the kit at recommended temperatures up to the expiration date. Store SP Conjugate at -20°C. Store Microplate, Diluent Concentrate (10x), Wash Buffer, Stop Solution, and Chromogen Substrate at 2-8°C. Unused microplate wells may be returned to the foil pouch with the desiccant packs and resealed. May be stored for up to 30 days in a vacuum desiccator. Diluent (1x) may be stored for up to 30 days at 2-8°C. 3 Store Standard and Biotinylated Steroid at 2-8°C before reconstituting with Diluent and at -20°C after reconstituting with Diluent.

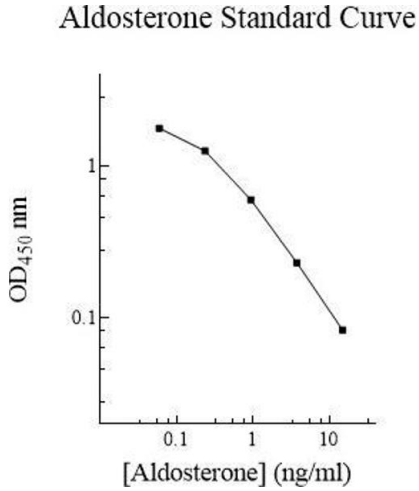
Aldosterone Standard Curve
OD450 nm
1
0.1
0.1
1
10
[Aldosterone] (ng/ml)

Image 1.