Datasheet for ABIN2866588

Aldosterone ELISA Kit

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Overview

Quantity:	96 tests
Target:	Aldosterone (ALD)
Reactivity:	Various Species, Human, Dog
Method Type:	Sandwich ELISA
Application:	ELISA

Product Details

Purpose:	The DetectX® Aldosterone Immunoassay kit is designed to quantitatively measure Aldosterone present in extracted serum and plasma, or in urine, extracted dried fecal samples, and tissue cul- ture media samples.
Brand:	DetectX®
Sample Type:	Serum, Plasma (EDTA), Plasma (heparin), Urine, Fecal, Tissue Culture Medium
Analytical Method:	Quantitative
Detection Method:	Colorimetric
Components:	Coated Clear 96 Well Plates A clear plastic microtiter plate(s) coated with donkey anti-sheep IgG. 1 Or 5 each Aldosterone Standard Aldosterone at 40,000 pg/mL in a special stabilizing solution. 125 Or 625 µL DetectX® Aldosterone Antibody A sheep polyclonal antibody specific for Aldosterone. 3 mL Or 13 mL DetectX® Aldosterone Conjugate An aldosterone-peroxidase conjugate in a special stabilizing solution. 3 mL Or 13 mL

Product Details

	Assay Buffer Concentrate A 5X concentrate that must be diluted with deionized or distilled water. 28 mL Or 55 mL Wash Buffer Concentrate A 20X concentrate that should be diluted with deionized or distilled water. 30 mL Or 125 mL TMB Substrate 11 mL Or 55 mL Stop Solution A 1M solution of hydrochloric acid. CAUSTIC. 5 mL Or 25 mL Plate Sealer Kit 1 Or 5 each
Material not included:	Distilled or deionized water. Ethyl acetate or ethanol for serum, plasma or fecal extracts. A speedvac for evaporation of ethanol or ethyl acetate Repeater pipet with disposable tips capable of dispensing 25 µL, 50 µL and 100 µL. A microplate shaker. Colorimetric 96 well microplate reader capable of reading optical density at 450 nm. Software for converting raw relative optical density readings from the plate reader and carrying out four parameter logistic curve (4PLC) fitting. Contact your plate reader manufacturer for details.

Target Details

Target:	Aldosterone (ALD)
Alternative Name:	Aldosterone (ALD Products)
Target Type:	Hormone
Background:	Aldosterone, C21H28O5, is a mineralocorticoid first isolated by the husband and wife team of Simp- son and Tait at University College, London in 1953 (1). Initially called electrocortin, 21 mg was isolated from 500 kg of beef adrenal glands. Aldosterone controls the sodium-potassium balance through the unidirectional salt reabsorption in a variety of tissues and glands (2,3). Synthesized from cholesterol in the zona glomerulosa of the adrenal cortex, secretion is regulated through the renin-angiotensin system (4). Angiotensin II and potassium stimulate primary secretion by increasing the rate of production of the steroid. Peripheral aldosterone levels are dependant on age and body position and in a normal upright adult aldosterone levels are typically less than 300 pg/mL. Aldosterone is typically secreted as the 18-glucuronide and the terahydro-3-glucuronide (5) and this excretion is generally 2-20 µg/24 hour urine collection (6). Aldosterone Aldosterone measurement is useful in the investigation of primary aldosteronism (i.e., adrenal adenoma or carcinoma and adrenal cortical hyperplasia) and secondary aldosteronism (renovas- cular disease, salt depletion, potassium loading, cardiac

Target Details

	failure with ascites, pregnancy, Bartter syndrome). The renin-angiotensin system is the primary regulator of the synthesis and secre- tion of aldosterone. Increased concentrations of potassium in the plasma may directly stimulate adrenal production of the hormone. Under physiologic conditions, pituitary adrenocorticotropic hormone is not a major factor in regulating aldosterone secretion

Application Details

Application Notes:	This assay has been validated for serum, EDTA and heparin plasma, urine samples and for tissue culture samples. It has also been validated for dried fecal extract samples. Samples containing visible particulate should be centrifuged prior to using. Moderate to severely hemolyzed samples should not be used in this kit. Aldosterone can be assayed in other sample types by using one of the extraction protocols Aldosterone is identical across all species and we expect this kit may measure aldosterone from sources other than mammalian. The end user should evaluate recoveries of aldosterone in other samples being tested.
Plate:	Pre-coated
Protocol:	This kit measures total aldosterone in extracted serum or plasma and fecal samples. An aldosterone stock solution is provided to generate a standard curve for the assay and all sam- ples should be read off the standard curve. We provide protocols on pages 8 and 12 to prepare assay standards from 4,000 to 3.906 pg/mL or from 5,000 to 8.192 pg/mL. Please choose the standard range that fits your sample concentrations most appropriately. Standards or diluted samples are pipetted into a clear microtiter plate coated with an antibody to capture sheep antibodies. An aldosterone-peroxidase conjugate is added to the standards and samples in the wells. The binding reaction is initiated by the addition of a polyclonal antibody to aldosterone to each well. After incubation, the plate is washed and substrate is added. The substrate reacts with the bound aldosterone-peroxidase conjugate. After a short incubation, the reaction is stopped and the intensity of the generated color is detected in a microtiter plate reader capable of measuring 450nm wavelength. The concentration of the aldosterone in the sample is calculated, after making suitable correction for the dilution of the sample, using software available with most plate readers.

Application Details

Sample Preparation:	Serum and plasma samples must be extracted with ethyl acetate or similar solvent. Dried fecal samples can be measured as outlined below. Urine samples can be diluted directly in Assay Buffer prior to being run in the assay. Serum and Plasma Samples Add 250 µL of serum or plasma to a glass test tube and add 250 µL of ethyl acetate. Vortex gently and allow layers to separate. Gently draw off the top organic layer and place it in a clean tube. Repeat the extraction with ethyl acetate 2 more times, pooling the ethyl acetate supernatants. Speedvac the ethyl acetate supernatant to dryness. Reconstitute with 10 µL of ethanol and dilute with 240 µL of supplied Assay Buffer. This dilution can be diluted further with Assay Buffer. Urine Samples Urine samples should be diluted ≥ 1:4 with the supplied Assay Buffer prior running in the assay. Please see our Urinary Creatinine Detection kits, K002-H1 and K002-H5, for assays to measure urine creatinine which can be used to allow normalization of aldosterone in a random urine speci- men. Dried Fecal Samples: The ethanol concen- tration in the final Assay Buffer dilution added to the well should be <5 % .
Restrictions:	For Research Use only

Handling

Precaution of Use:	As with all such products, this kit should only be used by qualified personnel who have had labo- ratory safety instruction. The complete insert should be read and understood before attempting to use the product. The antibody coated plate needs to be stored desiccated. The silica gel pack included in the foil ziploc bag will keep the plate dry. The silica gel pack will turn from blue to pink if the ziploc has not been closed properly. This kit utilizes a peroxidase-based readout system. Buffers, including other manufacturers Wash Buffers, containing sodium azide will inhibit color production from the enzyme. Make sure all buffers used for samples are azide free. Ensure that any plate washing system is rinsed well with deionized water prior to using the supplied Wash Buffer as prepared. The Stop Solution is acid. The solution should not come in contact with skin or eyes. Take appro- priate precautions when handling this reagent.
Storage:	4 °C,RT
Storage Comment:	All components of this kit should be stored at 4°C until the expiration date of the kit.

Publications

Product cited in:	Miyoshi, Sato, Saito, Otani, Shirahige, Miura, Ito, Jia, Kato: "Maternal Protein Restriction Alters the Renal Ptger1 DNA Methylation State in SHRSP Offspring." in: **Nutrients**, Vol. 10, Issue 10, (2019) (PubMed). Burgess, Hunt, Kraus, Rolland: "Get the most out of blow hormones: validation of sampling materials, field storage and extraction techniques for whale respiratory vapour samples." in: **Conservation physiology**, Vol. 4, Issue 1, pp. cow024, (2016) (PubMed).

Images

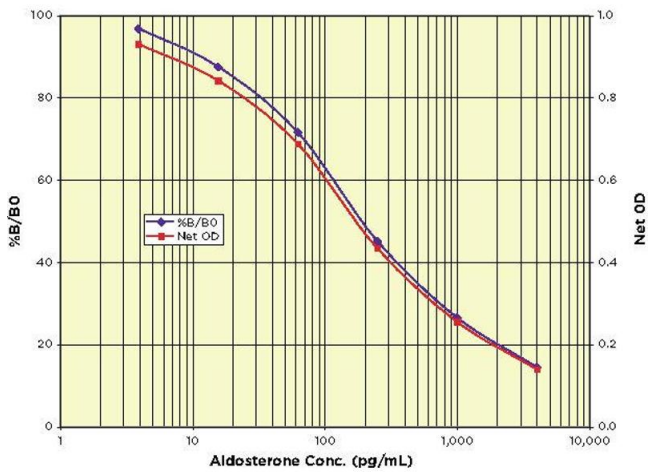

Image 1.