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# Datasheet for ABIN5593415

# **AKR1B10 ELISA Kit**



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Overview		
Quantity:	96 tests	
Target:	AKR1B10	
Reactivity:	Human	
Method Type:	Competition ELISA	
Detection Range:	0.78-50 ng/mL	
Minimum Detection Limit:	0.78 ng/mL	
Application:	ELISA	
Product Details		
Purpose:	This immunoassay kit allows for the in vitro quantitative determination of human Aldo-keto reductase family 1 member B10 concentrations in serum, plasma, tissue homogenates, cell culture supernates, and other biological fluids.	
Sample Type:	Plasma, Serum, Tissue Homogenate	
Analytical Method:	Quantitative	
Detection Method:	Colorimetric	
Specificity:	This assay recognizes recombinant and natural Human Aldo-keto reductase family 1 member B10. No significant cross-reactivity or interference was observed.  Note: Limited by current skills and knowledge, it is impossible for us to complete the cross-reactivity detection between human Aldo-keto reductase family 1 member B10 and all the analogues, therefore, cross reaction may still exist.	
Sensitivity:	< 0.23 ng/mL	

# **Product Details**

Assay plate x1 Components: Standard x2 Sample Diluent 1 x 20ml Assay Diluent A 1 x 10ml Assay Diluent B 1 x 10ml Detection Reagent A 1 x 60µl Detection Reagent B 1 x 120µl Wash Buffer(25 x concentrate) 1 x 30ml Substrate 1 x 10ml Stop Solution 1 x 10ml Plate sealer for 96 wells 5 instructions 1 Material not included: · Microplate reader. · Pipettes and pipette tips. • EP tube Deionized or distilled water.

# **Target Details**

Target:	AKR1B10	
Alternative Name:	AKR1B10 (AKR1B10 Products)	
Background:	Synonyms: Aldo-keto reductase family 1 member B10, Small intestine reductase(SI reductase), Aldose reductase-related protein(ARP, hARP), ARL-1, Aldose reductase-like	
UniProt:	060218	

UniProt:	060218
Application Details	
Comment:	<ol> <li>We are only responsible for the kit itself, but not for the samples consumed during the assay.         The user should calculate the possible amount of the samples used in the whole test. Please reserve sufficient samples in advance.     </li> <li>The kit should not be used beyond the expiration date on the kit label.</li> <li>Do not mix or substitute reagents with those from other lots or sources.</li> <li>If samples generate values higher than the highest standard, further dilute the samples with the Sample Diluent and repeat the assay. Any variation in standard diluent, operator, pipetting technique, washing technique,incubation time or temperature, and kit age can cause variation in binding.</li> </ol>
Sample Volume:	100 μL
Assay Time:	3-5h

Plate:	Pre-coated
Protocol:	The ELISA is based on the competitive binding enzyme immunoassay technique. The microtiter
	plate provided in this kit has been pre-coated with an antibody specific to Aldo-keto reductase
	family 1 member B10, During the reaction, Aldo-keto reductase family 1 member B10 in the
	sample or standard competes with a fixed amount of biotin-labeled Aldo-keto reductase family
	1 member B10 for sites on a pre-coated Monoclonal antibody specific to Aldo-keto reductase
	family 1 member B10. Excess conjugate and unbound sample or standard are washed from the
	plate. Next, Avidin conjugated to Horseradish Peroxidase (HRP) is added to each microplate
	well and incubated. Then a TMB substrate solution is added to each well. The enzyme-
	substrate reaction is terminated by the addition of a sulphuric acid solution and the color
	change is measured spectrophotometrically at a wavelength of 450 nm $\pm$ 2 nm. The
	concentration of Aldo-keto reductase family 1 member B10 in the samples is then determined
	by comparing the O.D. of the samples to the standard curve.
Reagent Preparation:	Wash Buffer - If crystals have formed in the concentrate, warm to room temperature and mix
	gently until the crystals have completely dissolved. Dilute 30 mL of Wash Buffer Concentrate
	into deionized or distilled water to prepare 750 mL of Wash Buffer.
	Standard - Reconstitute the Standard with 1.0 mL of Sample Diluent. This reconstitution
	produces a stock solution of 50.0 ng/mL. Allow the standard to sit for a minimum of
	15 minutes with gentle agitation prior to making serial dilutions (Making serial dilution in the
	wells directly is not permitted). The undiluted standard serves as the high standard (50.0 ng/mL
	). The Sample Diluent serves as the zero standard (0 ng/mL).
	Detection Reagent A and B - Dilute to the working concentration using Assay Diluent A and B
	(1:100), respectively.
Sample Collection:	Serum - Use a serum separator tube (SST) and allow samples to clot for 30 minutes before
	centrifugation for 15 minutes at approximately 1000 x g. Remove serum and assay
	immediately or aliquot and store samples at -20 °C or -80 °C.
	Plasma - Collect plasma using EDTA or heparin as an anticoagulant. Centrifuge samples for
	15 minutes at 1000 x g at 2 - 8 °C within 30 minutes of collection. Store samples at -20 °C or -
	80 °C. Avoid repeated freeze-thaw cycles.
	Tissue homogenates - The preparation of tissue homogenates will vary depending upon tissue
	type. For this assay, tissue was rinsed with 1X PBS to remove excess blood, homogenized in
	20 mL of 1X PBS and stored overnight at ≤ -20 °C. After two freeze-thaw cycles were performed
	to break the cell membranes, the homogenates were centrifuged for 5 minutes at $5000 \times g$ .
	Remove the supernate and assay immediately or aliquot and store at ≤ -20 °C. Cell culture

supernates and other biological fluids - Remove particulates by centrifugation and assay

immediately or aliquot and store samples at -20 °C or -80 °C. Avoid repeated freeze-thaw cycles.

#### Note:

- 1. Samples to be used within 5 days may be stored at 2-8 °C, otherwise samples must stored at -20 °C (1 month) or -80 °C (2 months) to avoid loss of bioactivity and contamination.
- 2. Tissue or cell extraction samples prepared by chemical lysis buffer may cause unexpected ELISA results due to the impacts of certain chemicals.
- 3. Influenced by the factors including cell viability, cell number and also sampling time, samples from cell culture supernatant may not be detected by the kit
- 4. Sample hemolysis will influence the result, so hemolytic specimen can not be detected.
- 5. When performing the assay slowly bring samples to room temperature.

#### Assay Procedure:

Allow all reagents to reach room temperature (Please do not dissolve the reagents at 37 °C directly.). All the reagents should be mixed thoroughly by gently swirling before pipetting. Avoid foaming. Keep appropriate numbers of strips for 1 experiment and remove extra strips from microtiter plate. Removed strips should be resealed and stored at 4 °C until the kits expiry date. Prepare all reagents, working standards and samples as directed in the previous sections. Please predict the concentration before assaying. If values for these are not within the range of the standard curve, users must determine the optimal sample dilutions for their particular experiments.

- 1. Add 50 µL of Standard, Blank, or Sample per well.
- 2. Immediately add 50  $\mu$ L of Detection A working solution to each well. Cover with the Plate sealer. Gently tap the plate to ensure thorough mixing. Incubate for 1 hour at 37 °C.
- 3. Aspirate each well and wash, repeating the process three times for a total of three washes. Wash by filling each well with Wash Buffer (approximately 400  $\mu$ L) using a squirt bottle, multichannel pipette, manifold dispenser or autowasher and let it sit for  $1\sim2$  minutes. Complete removal of liquid at each step is essential to good performance. After the last wash, remove any remaining Wash Buffer by aspirating or decanting. Invert the plate and blot it against clean paper towels.
- 4. Add 100  $\mu$ L of Detection Reagent B working solution to each well. Cover with a new Plate sealer. Incubate for 45 minutes at 37 °C.
- 5. Repeat the aspiration/wash process for five times as conducted in step three.
- 6. Add 90  $\mu$ L of Substrate Solution to each well. Cover with a new Plate sealer. Incubate within 15-30 minutes at 37 °C. Protect from light.
- 7. Add 50  $\mu$ L of Stop Solution to each well. If color change does not appear uniform, gently tap the plate to ensure thorough mixing.
- 8. Determine the optical density of each well at once, using a microplate reader set to 450 nm.

#### Note:

- 1. Absorbance is a function of the incubation time. Therefore, prior to starting the assay it is recommended that all reagents should be freshly prepared prior to use and all required stripwells are secured in the microtiter frame. This will ensure equal elapsed time for each pipetting step, without interruption.
- 2. Please carefully reconstitute Standards or working Detection Reagent A and B according to the instruction, and avoid foaming and mix gently until the crystals have completely dissolved. The reconstituted Standards Detection Reagent A and B can be used only once. This assay requires pipetting of small volumes. To minimize imprecision caused by pipetting, ensure that pipettors are calibrated. It is recommended to suck more than 10 μL for once pipetting.
- 3. To ensure accurate results, proper adhesion of plate sealers during incubation steps is necessary. Do not allow wells to sit uncovered for extended periods between incubation steps. Once reagents have been added to the well strips, DO NOT let the strips DRY at any time during the assay.
- 4. For each step in the procedure, total dispensing time for addition of reagents to the assay plate should not exceed 10 minutes.
- 5. To avoid cross-contamination, change pipette tips between additions of each standard level, between sample additions, and between reagent additions. Also, use separate reservoirs for each reagent.
- 6. The wash procedure is critical. insufficient washing will result in poor precision and falsely elevated absorbance readings.
- 7. Duplication of all standards and specimens, although not required, is recommended.
- 8. Substrate Solution is easily contaminated. Please protect it from light.
- 9. The web version of manual is only for reference, subject to the instruction shipping with the kit.

### Calculation of Results:

Average the duplicate readings for each standard, control, and sample. Create a standard curve by reducing the data using computer software capable of generating a four parameter logistic (4-PL) curve-fit. As an alternative, construct a standard curve by plotting the mean absorbance for each standard on the x-axis against the concentration on the y-axis and draw a best fit curve through the points on the graph. The data may be linearized by plotting the log of the Aldo-keto reductase family 1 member B10 concentrations versus the log of the O.D. and the best fit line can be determined by regression analysis. It is recommended to use some related software to do this calculation, such as curve expert 1.3. This procedure will produce an adequate but less precise fit of the data. If samples have been diluted, the concentration read from the standard curve must be multiplied by the dilution factor.

Important note:

- 1. Limited by the current condition and scientific technology, we can't completely conduct the comprehensive identification and analysis on the raw material provided by suppliers. So there might be some qualitative and technical risks to use the kit
- 2. The final experimental results will be closely related to validity of the products, operation skills of the end users and the experimental environments. Please make sure that sufficient samples are available.
- 3. Kits from different batches may be a little different in detection range, sensitivity and color developing time. Please perform the experiment exactly according to the instruction attached in kit while electronic ones from our website is only for information.
- 4. There may be some foggy substance in the wells when the plate is opened at the first time. It will not have any effect on the final assay results.
- 5. Do not remove microtiter plate from the storage bag until needed.
- 6. A microtiter plate reader with a bandwidth of 10nm or less and an optical density range of 0-3 OD or greater at 450nm wavelength is acceptable for use in absorbance measurement.
- 7. Use fresh disposable pipette tips for each transfer to avoid contamination.
- 8. Do not substitute reagents from one kit lot to another. Use only the reagents supplied by manufacturer.
- 9. Even the same operator might get different results in two separate experiments. In order to get better reproducible results, the operation of every step in the assay should be controlled. Furthermore, a preliminary experiment before assay for each batch is recommended.
- 10. Each kit has been strictly passed Q.C test. However, results from end users might be inconsistent with our in-house data due to some unexpected transportation conditions or different lab equipments. Intra-assay variance among kits from different batches might arise from above factors, too.
- 11. Kits from different manufacturers for the same item might produce different results, since we haven't compared our products with other manufacturers.
- 12. The instruction manual also suit for the kit of 48T, but all reagents of 48T kit is reduced by half.
- 13. Valid period: six months.

Restrictions:

For Research Use only

Handling	
Precaution of Use:	The Stop Solution suggested for use with this kit is an acid solution. Wear eye, hand, face, and clothing protection when using this material.
Storage:	4 °C
Storage Comment:	The Assay Plate, Standard, Detection Reagent A and Detection Reagent B should be stored at -20°C upon being received. After receiving the kit, Substrate should be always stored at 4°C.Other reagents are kept according to the labels on vials. But for long term storage, please keep the whole kit at -20°C(Except the substrate). The unused strips should be kept in a sealed

# Handling

bag with the desiccant provided to minimize exposure to damp air. The test kit may be used throughout the expiration date of the kit (six months from the date of manufacture). Opened test kits will remain stable until the expiring date shown, provided it is stored as prescribed above.

Note: Because of the inherent stability of lyophilized material may shipped at ambient temperature.

Expiry Date:

6 months