Datasheet for ABIN578941

TEP1 ELISA Kit

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Overview

Quantity:	96 tests
Target:	TEP1
Reactivity:	Rat
Method Type:	Sandwich ELISA
Application:	ELISA

Product Details

Purpose:	This immunoassay kit allows for the in vitro quantitative determination of rat telomerase, TE concentrations in tissue homogenates and other biological fluids.
Sample Type:	Tissue Homogenate
Analytical Method:	Quantitative
Detection Method:	Colorimetric
Specificity:	This assay recognizes recombinant and natural rat TE.
Cross-Reactivity (Details):	No significant cross-reactivity or interference was observed.
Sensitivity:	The sensitivity of this assay, or Lower Limit of Detection (LLD) was defined as the lowest detectable concentration that could be differentiated from zero.
Characteristics:	Rattus norvegicus,Rat,Telomerase protein component 1,rTLP1,Telomerase-associated protein 1,Telomerase protein 1,p230,p240,p80 telomerase homolog,Tep1,Tlp1
Components:	Reagent (Quantity): Assay plate (1×20ml), Standard (2), Sample Diluent (1 × 20ml), Assay Diluent A (1x10ml), Assay Diluent B (1x10ml), Detection Reagent A (1 × 120µl), Detection Reagent B (1 × 120µl), Wash Buffer (25 x concentrate) (1 × 30ml), Substrate (1x10ml), Stop

Product Details

	Solution (1x10ml), Plate sealer for 96 wells (5), Instruction (1)
Material not included:	Luminometer. Pipettes and pipette tips. EP tube Deionized or distilled water.

Target Details

Target:	TEP1
Alternative Name:	Tep1 (TEP1 Products)
Background:	Telomerase, a eukaryotic ribonucleoprotein (RNP) complex, contains both an essential RNA and a protein reverse transcriptase subunit. It helps to stabilize telomere length in rat stem cells and reproductive cells and cancer cells by adding TTAGGG repeats onto the telomeres using its intrinsic RNA as a template for reverse transcription. Telomerase activity has been found in almost all rat tumors but not in adjacent normal cells. The most prominent hypothesis is that maintenance of telomere stability is required for the long-term proliferation of tumors. Telomeres are bits of genetic material that cap the ends of chromosomes. Each time a cell divides, these telomeres get shorter until finally they are so short that damage begins to happen to the ",interior", DNA or chromosomes start to stick to one another on the ends. The number of times a cell divides before going into this decline is called the ",Hayflick limit.", Telomerase is a naturally-occurring enzyme which re-lengthens telomeres. It is present in high concentrations in the fast-growing embryo's stem cells, and declines with age. Most cancer cells are able to divide well beyond the Hayflick limit and become tumors because they re-activate telomerase.Many companies are working on both the cancer connection and the cellular rejuvenation connection.
Gene ID:	3129
Pathways:	Inositol Metabolic Process, Synaptic Membrane, Regulation of Cell Size, Autophagy, Platelet-derived growth Factor Receptor Signaling, Signaling of Hepatocyte Growth Factor Receptor

Application Details

Sample Volume:	100 µL
Plate:	Pre-coated
Protocol:	The microtiter plate provided in this kit has been pre-coated with an antibody specific to TE. Standards or samples are then added to the appropriate microtiter plate wells with a biotin-conjugated polyclonal antibody preparation specific for TE and Avidin conjugated to Horseradish Peroxidase (HRP) is added to each microplate well and incubated. Then a TMB

	substrate solution is added to each well. Only those wells that contain TE, biotin-conjugated antibody and enzyme-conjugated Avidin will exhibit a change in color. 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 ± 2 nm. The concentration of TE in the samples is then determined by comparing the O.D. of 2 the samples to the standard curve.
Reagent Preparation:	Bring all reagents to room temperature before use. 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 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 ng/ml). The Sample Diluent serves as the zero standard (0 ng/ml). ng/mL 50 25 12.5 6.25 3.12 1.56 0.78 0 Detection Reagent A and B - Dilute to the working concentration using Assay Diluent A and B (1:100), respectively.
Sample Collection:	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 5~10 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 x g. Remove the supernate and assay immediately or aliquot and store at ≤ -20 °C. Other biological fluids - Remove particulates by centrifugation and assay immediately or aliquot and store samples at -20C or -80C. Avoid repeated freeze-thaw cycles. Note: Tissue homogenates to be used within 7 days may be stored at 2-8 C, otherwise samples must stored at -20C (≤ 1 months) or -80C (≤ 2 months) to avoid loss of bioactivity and contamination. Avoid freeze-thaw cycles. 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 37C 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 4C 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 100 µl of Standard, Blank, or Sample per well. Cover with the Plate sealer. Incubate for 2

hours at 37C.

2. Remove the liquid of each well, don't wash.

3. Add 100 µl of Detection Reagent A working solution to each well. Cover with the Plate sealer. Incubate for 1 hour at 37°C. Detection Reagent A working solution may 4 appear cloudy. Warm to room temperature and mix gently until solution appears uniform.

4. 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 µl) using a squirt bottle, multi-channel pipette, manifold dispenser or autowasher. 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.

5. Add 100 µl of Detection Reagent B working solution to each well. Cover with a new Plate sealer. Incubate for 1 hours at 37C.

6. Repeat the aspiration/wash five times as in step

4. 7. Add 90 µl of Substrate Solution to each well. Cover with a new Plate sealer. Incubate within 30 minutes at 37°C. Protect from light.

8. Add 50 µl of Stop Solution to each well. If color change does not appear uniform, gently tap the plate to ensure thorough mixing.

9. Determine the optical density of each well at once, using a microplate reader set to 450 nm. Important 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 strip-wells 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 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 10µl 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.

Application Details

	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.
Calculation of Results:	Average the duplicate readings for each standard, control, and sample and subtract the average zero standard optical density. 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 TE 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 13.0. 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.
Restrictions:	For Research Use only

Handling

Handling Advice:	1. The kit should not be used beyond the expiration date on the kit label. 2. Do not mix or substitute reagents with those from other lots or sources. 3. If samples generate values higher than the highest standard, further dilute the samples and repeat the assay. Any variation in standard diluent, operator, pipetting technique, washing technique,incubation time or temperature, and kit age can cause 3 variation in binding. 4. This assay is designed to eliminate interference by soluble receptors, ligands, binding proteins, and other factors present in biological samples. Until all factors have been tested in the Immunoassay, the possibility of interference cannot be excluded.
Storage:	4 °C/-20 °C
Storage Comment:	The Standard, Detection Reagent A, Detection Reagent B and the 96-well strip plate should be stored at -20 °C upon being received. The other reagents can be stored at 4 °C.