Datasheet for ABIN456685

PRSS2 ELISA Kit

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Overview

Quantity:	96 tests
Target:	PRSS2
Reactivity:	Mouse
Method Type:	Sandwich ELISA
Detection Range:	0.156-10 ng/mL
Minimum Detection Limit:	0.156 ng/mL
Application:	ELISA

Product Details

Purpose:	This immunoassay kit allows for the specific measurement of mouse trypsin concentrations in cell culture supernates, serum, plasma and other relevant liquid.
Sample Type:	Cell Culture Supernatant, Plasma, Serum
Analytical Method:	Quantitative
Detection Method:	Colorimetric
Specificity:	This assay recognizes recombinant and natural mouse Trypsin.
Cross-Reactivity (Details):	No significant cross-reactivity or interference was observed.
Sensitivity:	< 0.39 ng/mL 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:	Mus musculus,Mouse,Anionic trypsin-2,Anionic trypsin II,Pretrypsinogen II,Serine protease

Product Details

	2,Prss2,Try2,3.4.21.4
Components:	Reagent (Quantity): Assay plate (1), Standard (2), Sample Diluent (1x20ml), Assay Diluent A (1x10ml), Assay Diluent B (1x10ml), Detection Reagent A (1x120µl), Detection Reagent B (1x120µl), Wash Buffer(25 x concentrate) (1x30ml), Substrate (1x10ml), Stop Solution (1x10ml)

Target Details

Target:	PRSS2
Alternative Name:	Prss2 (PRSS2 Products)
Background:	Trypsin is a serine protease found in the digestive system, where it breaks down proteins. It is used for numerous biotechnological processes.Trypsin is secreted into the intestine, where it acts to hydrolyse proteins into smaller peptides or amino acids. This is necessary for the uptake of protein in the food. Trypsin catalyses the hydrolysis of peptide bonds. The enzymatic mechanism is like all other serine proteases: A catalytic triad serves to make the active site serine nucleophilic. This is achieved by modifying the electrostatic environment of the serine. The enzymatic reaction that trypsins catalyze is thermodynamically favorable but requires significant activation energy (it is 'kinetically unfavorable'). Trypsins have an optimal operating pH of about 8 and optimal operating temperature of about 37°C. Trypsins are considered endopeptidases, i.e., the cleavage occurs within the polypeptide chain rather than at the terminal amino acids located at the ends of polypeptides. Trypsin is produced in the pancreas in the form of inactive zymogen, trypsinogen. It is then secreted into the small intestine, where the enzyme enterokinase activates it into trypsin by proteolytic cleavage. The resulting trypsins themselves activate more trypsinogens (autocatalysis), so only a small amount of enterokinase is necessary to start the reaction. This activation mechanism is common for most serine proteases, and serves to prevent autodigestion of the pancreas.The activity of trypsins is not affected by the inhibitor tosyl phenylalanyl chloromethyl ketone TPCK, which deactivates chymotrypsin. This is important because, in some applications, like mass spectrometry, the specificity of cleavage is important.

Application Details

Sample Volume:	100 µL
Plate:	Pre-coated
Protocol:	This assay employs the quantitative sandwich enzyme immunoassay technique. A antibody specific for Trypsin has been pre-coated onto a microplate. Standards and samples are

	pipetted into the wells and any Trypsin present is bound by the immobilized antibody. An enzyme-linked antibody specific for Trypsin is added to the wells. Following a wash to remove any unbound antibody-enzyme reagent, a substrate solution is added to the wells and color develops in proportion to the amount of Trypsin bound in the initial step. The color development is stopped 2 and the intensity of the color is measured.
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 20 mL of Wash Buffer Concentrate into deionized or distilled water to prepare 500 ml of Wash Buffer. 3 Standard - Reconstitute the Standard with 1.0 mL of Sample Diluent. This reconstitution produces a stock solution of 100 ng/mL. Allow the standard to sit for a minimum of 15 minutes with gentle agitation prior to making serial dilutions. The undiluted standard serves as the high standard (100 ng/mL). The Sample Diluent serves as the zero standard (0 ng/mL). Detection Reagent A and B - Dilute to the working concentration specified on the vial label using Assay Diluent A and B (1:100), respectively.
Sample Collection:	Cell culture supernates - Remove particulates by centrifugation and assay immediately or aliquot and store samples at ≤ -20 °C. Avoid repeated freeze-thaw cycles. 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. 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. Avoid repeated freeze-thaw cycles. Note: Citrate plasma has not been validated for use in this assay.
Assay Procedure:	Allow all reagents to reach room temperature. Arrange and label required number of strips. 1. Prepare all reagents, working standards and samples as directed in the previous sections. 2. Add 100 uL of Standard, Control, or sample per well. Cover with the adhesive strip. Incubate for 2 hours at 37 °C. 3. Remove the liquid of each well, don't wash. 4. Add 100 uL of Detection Reagent A to each well. Incubate for 1 hour at 37°C. Detection Reagent A may appear cloudy. Warm to room temperature and mix gently until solution appears uniform. 5. Aspirate each well and wash, repeating the process three times for a total of three washes. Wash by filling each well with Wash Buffer (350 uL) 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.

Application Details

	6. Add 100 uL of Detection Reagent B to each well. Cover with a new adhesive strip.Incubate for 1 hours at 37 °C. 7. Repeat the aspiration/wash as in step 5. 8. Add 90 uL of Substrate Solution to each well. Incubate for 30 minutes at room temperature. Protect from light. 9. Add 50 uL of Stop Solution to each well. If color change does not appear uniform, gently tap the plate to ensure thorough mixing. 10. Determine the optical density of each well within 30 minutes, using a microplate reader set to 450 nm. Important Note: 1. The wash procedure is critical. Insufficient washing will result in poor precision and falsely elevated absorbance readings. 2. It is recommended that no more than 32 wells be used for each assay run if manual pipetting is used since pipetting of all standards, specimens and controls should be completed within 5 minutes. A full plate of 96 wells may be used if automated pipetting is available. 3. Duplication of all standards and specimens, although not required, is recommended. 4. When mixing or reconstituting protein solutions, always avoid foaming. 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. To ensure accurate results, proper adhesion of plate sealers during incubation steps is necessary.
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 y-axis against the concentration on the x-axis and draw a best fit curve through the points on the graph. The data may be linearized by plotting the log of the Trypsin concentrations versus the log of the O.D. and the best fit line can be determined by regression analysis. 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.

Handling

	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 with the Assay 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. 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.