Anti-Human ACE2 Antibody [PSH17-18] - BSA and Azide free (Detector)

HA723905

Product Type:	Recombinant Rabbit monoclonal IgG, primary antibodies
Species reactivity:	Human
Applications:	ELISA(Det)
Clone number:	PSH17-18

Description: Angiotensin-converting enzyme 2 (ACE2) is an enzyme that can be found either attached to the membrane of cells (mACE2) in the intestines, kidney, testis, gallbladder, and heart or in a soluble form (sACE2). Both membrane bound and soluble ACE2 are integral parts of the renin–angiotensin–aldosterone system (RAAS) that exists to keep the body's blood pressure in check. mACE2 is cleaved by the enzyme ADAM17 in a process regulated by substrate presentation. ADAM17 cleavage releases the extracellular domain creating soluble ACE2 (sACE2). ACE2 enzyme activity opposes the classical arm of the RAAS by lowering blood pressure through catalyzing the hydrolysis of angiotensin II (a vasoconstrictor peptide which raises blood pressure) into angiotensin (1–7) (a vasodilator). Angiotensin (1-7) in turns binds to MasR receptors creating localized vasodilation and hence decreasing blood pressure. This decrease in blood pressure makes the entire process a promising drug target for treating cardiovascular diseases.

Immunogen: Recombinant protein within Human ACE2 aa 18-740 (HAg2008).

Positive control: Recombinant Human ACE2 protein (HAg2008).

Subcellular location: Cell membrane, Cytoplasm, Cell projection, cilium, Apical cell membrane; Secreted.

Database links: SwissProt: Q9BYF1 Human

Recommended Dilutions:

ELISA(Det) Use at an assay dependent concentration. Can be paired for Sandwich ELISA with Rabbit monoclonal [PSH17-17] to Human ACE2 antibody (Capture) (HA723904) and Recombinant Human ACE2 protein (HAg2008) as the standard. The reference range value is 78.1-20,000 pg/mL.

Storage Buffer: PBS (pH7.4).

Storage Instruction: Store at +4℃ after thawing. Aliquot store at -20℃. Avoid repeated freeze / thaw cycles.

Purity: Protein A affinity purified.

Images

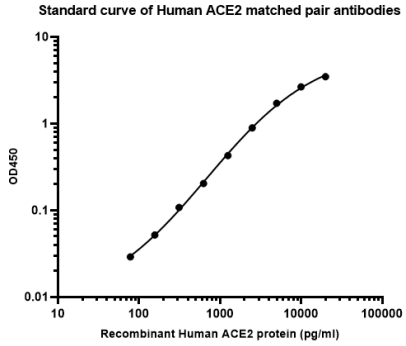

Fig1: Sandwich ELISA analysis of Human ACE2 matched pair antibodies

Capture: HA723904, Human ACE2 Rabbit mAb [PSH17-17]
Detector: HA723905, Human ACE2 Rabbit mAb [PSH17-18]

Elisa assay was performed by coating wells of a 96-well plate with 100 µl per well of capture antibody (HA723904) diluted in carbonate/bicarbonate buffer, at a concentration of 2 µg/mL overnight at 4℃. Wells of the plate were washed, blocked with 150 µl 0.05% tween-20 1% BSA blocking buffer, and incubated with serial diluted Recombinant Human ACE2 protein (HAg2008) starting from 20,000 pg/ml to 0 pg/ml and detect antibody (HA723905, Biotin, 0.2 µg/ml) for 1 hour at 30℃ with shaking. Then the plate was washed and incubated with 100 µl per well of SA-HRP for 0.5 hour at 30℃ with shaking. Detection was performed using an Ultra TMB Substrate for 10 minutes at room temperature in the dark. The reaction was stopped with sulfuric acid and absorbances were read on a spectrophotometer at 450 nm.

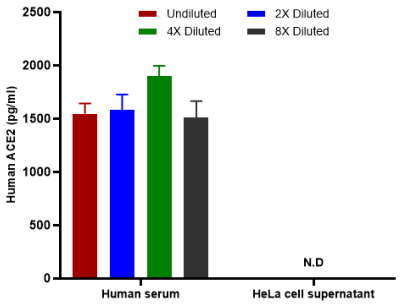

Fig2: Interpolated concentrations of native ACE2 in human serum samples and HeLa cell culture supernatant.

Capture: HA723904, Human ACE2 Rabbit mAb [PSH17-17]
Detector: HA723905, Human ACE2 Rabbit mAb [PSH17-18]

The concentrations of ACE2 were measured in duplicates, interpolated from the ACE2 standard curve and corrected for sample dilution. Undiluted samples are human serum 50% and HeLa cell culture supernatant 50%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean ACE2 concentration was determined to be 1,633 pg/ml in human serum and undetectable in HeLa cell culture supernatant.

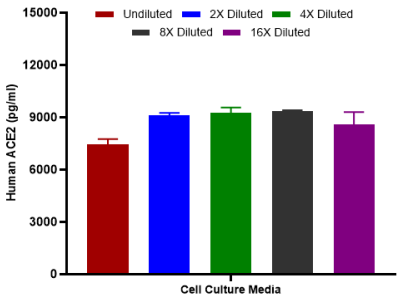

Fig3: Interpolated concentrations of spiked ACE2 in human cell culture media samples.

Capture: HA723904, Human ACE2 Rabbit mAb [PSH17-17]
Detector: HA723905, Human ACE2 Rabbit mAb [PSH17-18]

The concentrations of ACE2 were measured in duplicates, interpolated from the ACE2 standard curves and corrected for sample dilution. Diluted samples are as follows: 25% cell culture media with FBS. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2).

Background References

1. Wang CW et al. ACE2 in chronic disease and COVID-19: gene regulation and post-translational modification. J Biomed Sci. 2023 Aug
2. Wang J et al. ACE2 Shedding and the Role in COVID-19. Front Cell Infect Microbiol. 2022 Jan