FT-JN310

ACE2 Antibody

ProSci™

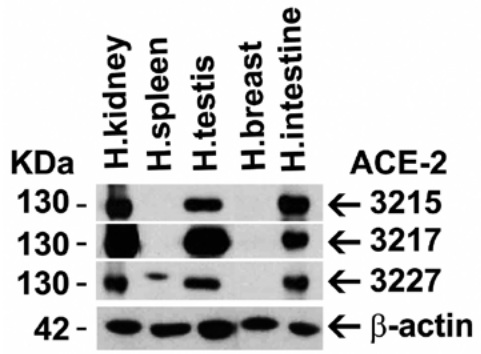

Fig. 1 Independent Antibody Validation (IAV) via Protein Expression Profile in Human Tissues
Loading: 15 µg of lysates per lane.Antibodies: ACE2, 3215 (2µg/mL), ACE2, 3217 (2µg/mL), ACE2, 3217 (2µg/mL) and beta-actin 3779 (1µg/m)

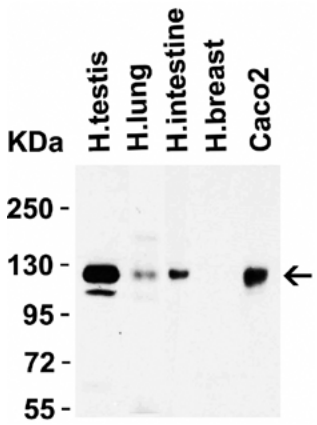

Fig. 2 Immunofluorescent Validation of 3525 in SARS-CoV-2 Infected Nose and Tonsil (Singh et al., Nature Microbiology, 2021)
2 Western Blot Validation in Human Tissues and Cell Line
Loading: 15µg of lysates per lane. Antibodies: ACE2, 3217 (2µg/mL), 1h incubation at RT in 5% NFDM/TBST. Secondary: Goat anti-rabbit IgG HRP conjugate at 1:10000 dilution.

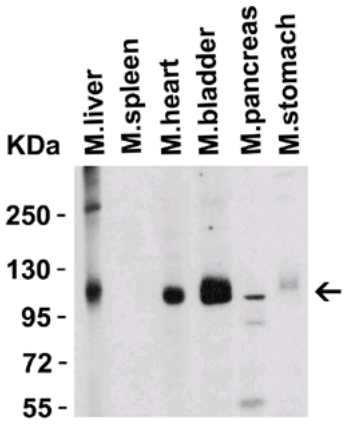

Fig. 3 Western Blot Validation in Mouse Tissues
Loading: 15µg of lysates per lane. Antibodies: ACE2, 3217 (2µg/mL), 1h incubation at RT in 5% NFDM/TBST. Secondary: Goat anti-rabbit IgG HRP conjugate at 1:10000 dilution.

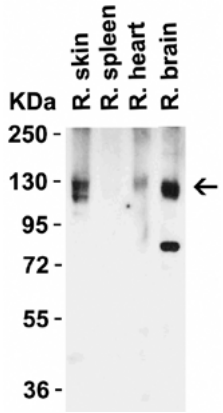

Fig. 4 Western Blot Validation in Rat Tissues
Loading: 15 µg of lysates per lane. Antibodies: ACE2, 3217 (2µg/mL), 1h incubation at RT in 5% NFDM/TBST. Secondary: Goat anti-rabbit IgG HRP conjugate at 1:10000 dilution.

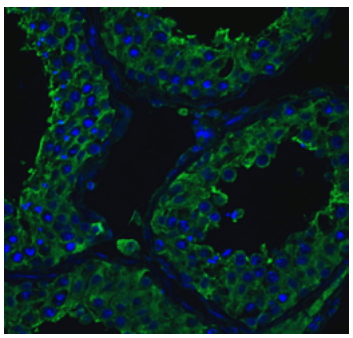

Fig. 5 Immunofluorescence Validation of ACE2 in Human Testis Tissue Immunofluorescent analysis of 4% paraformaldehydefixed human testis tissue labeling ACE-2 with 3217 at 20µg/mL, followed by goat anti-rabbit IgG secondary antibody at 1/500 dilution (green) and DAPI staining (blue).

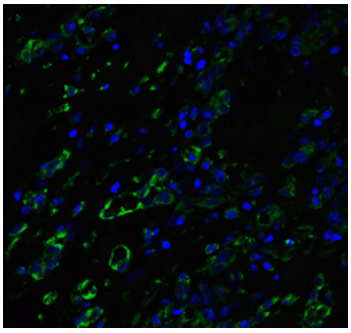

Fig. 6 Immunofluorescence Validation of ACE2 in Human Lung Tissue

Immunofluorescent analysis of 4% paraformaldehydefixed human lung tissue labeling ACE-2 with 3217 at 20µg/mL, followed by goat anti-rabbit IgG secondary antibody at 1/500 dilution (green) and DAPI staining (blue).

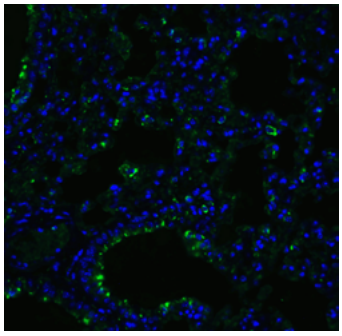

Fig. 7 Immunofluorescence Validation of ACE2 in Mouse Lung Tissue

Immunofluorescent analysis of 4% paraformaldehydefixed mouse lung tissue labeling ACE-2 with 3217 at 20µg/mL, followed by goat anti-rabbit IgG secondary antibody at 1/500 dilution (green) and DAPI staining (blue).

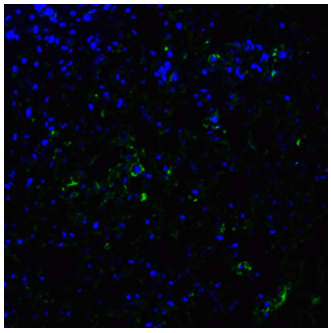

Fig. 8 Immunofluorescence Validation of ACE2 in Rat Lung Tissue

Immunofluorescent analysis of 4% paraformaldehydefixed rat lung tissue labeling ACE-2 with 3217 at 20µg/mL, followed by goat anti-rabbit IgG secondary antibody at 1/500 dilution (green) and DAPI staining (blue).

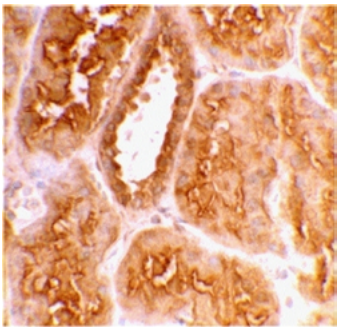

Fig. 9 Immunohistochemistry Validation of ACE2 in Human Kidney Tissue

Immunohistochemical analysis of paraffin-embedded human kidney tissue using anti-ACE2 antibody (3217) at 2µg/mL. Tissue was fixed with formaldehyde and blocked with 10% serum for 1h at RT; antigen retrieval was by heat mediation with a citrate buffer (pH6). Samples were incubated with primary antibody overnight at 4˚C. A goat anti-rabbit IgG H&L (HRP) at 1/250 was used as secondary. Counter stained with Hematoxylin.

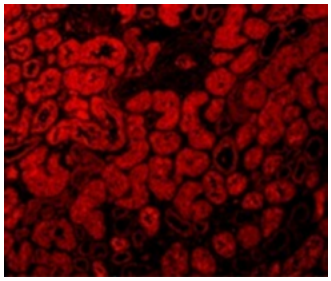

Fig. 10 Immunofluorescence Validation of ACE2 in Human Kidney Tissue

Immunofluorescent analysis of 4% paraformaldehydefixed human kidney cells labeling ACE2 with 3217 at 10µg/mL, followed by goat anti-rabbit IgG secondary antibody at 1/500 dilution (red).

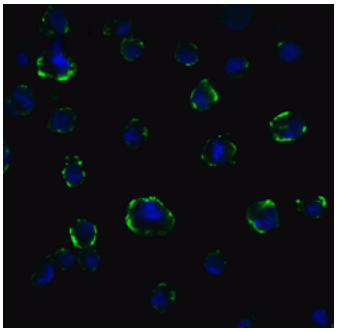

Fig. 11 Immunofluorescence Validation of ACE2 In Caco2 Cells

Immunofluorescent analysis of 4% paraformaldehydefixed Caco2 cells labeling ACE2 with 3217 at 5µg/mL, followed by goat anti-rabbit IgG secondary antibody at 1/500 dilution (green) and DAPI staining (blue). Image showing membrane staining on Caco2 cells.

Specifications

Host species	Rabbit
Species reactivity	Human, Mouse, Rat
Homology	Predicted species reactivity based on immunogen sequence: Bovine: (88%)
Immunogen	Anti-ACE2 antibody (3217) was raised against a peptide corresponding to 18 amino acids near the carboxy terminus of human ACE2. The immunogen is located within the last 50 amino acids of ACE2.
Tested applications	ELISA, IF, IHC-P, WB
Applications	WB: 1-2µg/mL; IHC: 2µg/mL; IF: 10µg/mL Antibody validated: Western Blot in human, mouse and rat samples; Immunohistochemistry in human samples; Immunofluorescence in human, mouse, and rat samples. All other applications and species not yet tested.
Specificity	Anti-ACE2 has no cross response to ACE1.
Positive control	1) Cat. No. 1305 - Human Kidney Tissue Lysate 2) Cat. No. 10-401 - Human Kidney Tissue Slide 3) Cat. No. 1306 - Human Spleen Tissue Lysate 4) Cat. No. 1313 - Human Testis Tissue Lysate
Predicted molecular weight	Predicted: 93kD Observed: 130 kD (7 N-linked glycosylation)

Advanced Validation

Validation	**Independent Antibody Validation in Cell lines** (Figure 1) shows similar ACE2 expression profile in human cell lines detected by three independent anti-ACE2 antibodies that recognize different epitopes, **3215** against central domain, **3217** against C-terminus domain and **3227** against N-terminus domain. ACE2 proteins are detected in the most tested tissues at different expression levels by three independent antibodies.
Isoforms	Human ACE2 has 2 isoforms, including isoform 1 (805aa, 93kD) and isoform 2 (555aa, 64kD). Mouse ACE2 also has 2 isoforms, including isoform 1 (805aa, 92kD) and isoform 2 (353aa, 40kD). Rat ACE2 has one isoform (805aa, 93kD). 3215 can detect human, mouse and rat.

Properties

Purification	ACE2 Antibody is affinity chromatography purified via peptide column.
Clonality	Polyclonal
Isotype	IgG
Conjugate	Unconjugated
Physical state	Liquid
Buffer	ACE2 Antibody is supplied in PBS containing 0.02% sodium azide.
Concentration	1mg/mL
Storage conditions	ACE2 antibody can be stored at 4˚C for three months and -20˚C, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.

Additional Info

Official symbol	ACE2
Alternate names	ACE2 Antibody: ACEH, Angiotensin-converting enzyme 2, ACE-related carboxypeptidase, ACEH, SARS-CoV receptor, SARS-CoV-2 receptor
Accession no.	NP_068576
Protein GI no.	11225609
Gene ID	59272
User note	Optimal dilutions for each application to be determined by the researcher.

Background and References

Background	ACE2 Antibody: Angiotensin-converting enzyme 2 (ACE2) plays a central role in vascular, renal, and myocardial physiology. In contrast to its homolog ACE, ACE2 expression is restricted to heart, kidney, and testis. Recently. ACE2 has also been shown to be a functional receptor of the SARS coronavirus. Homology modeling shows 2019-nCoV has a similar receptor-binding domain structure as SARS-CoV, which suggests **COVID-19 (2019-nCoV) may use ACE2 as a receptor in humans** for infection. The normal function of ACE2 is to convert the inactive vasoconstrictor angiotensin I (AngI) to Ang1-9 and the active form AngII to Ang1-7, unlike ACE, which converts AngI to AngII. While the role of these vasoactive peptides is not well understood, lack of ACE2 expression in ace2-/ace2-mice leads to severely reduced cardiac contractility, indicating its importance in regulating heart function.
References	1) Donoghue et al. Circ. Res. 2000;87:1-9. 2) Tipnis et al. J Biol. Chem. 2000;275:33238-43. 3) Li et al. Nature 2003;426:450-4. 4) Lu et al. The Lancet 2020 (published online). 5) Crackower et al. Nature 2002;417:822-8.

CITATIONS

1)Wei, et al.Genome-wide CRISPR Screens Reveal Host Factors Critical for SARS-CoV-2 Infection. Cell. 2020 Oct 20;S0092-8674(20)31392-1. doi: 10.1016/j.cell.2020.10.028. PMID: 33147444