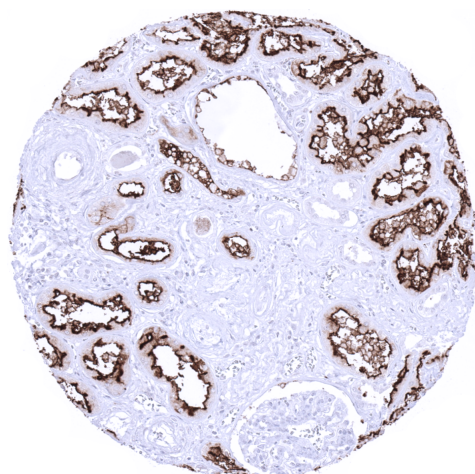


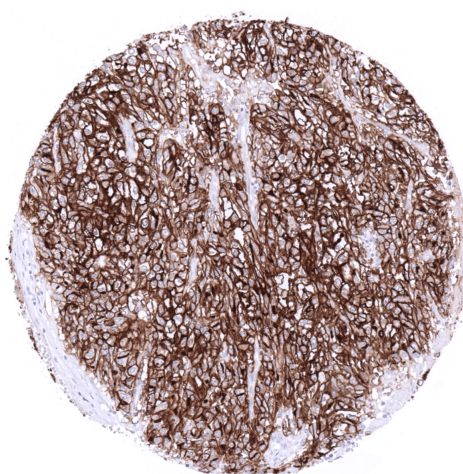
## Anti- ACE2 Antibody MSVA-919R / Recombinant Rabbit monoclonal

Human SwissProt	Q9BYF1
Human Gene Symbol	ACE2
Synonyms	Angiotensin I converting enzyme 2
Specificity	ACE2
Immunogen	Recombinant peptide of human ACE2
Isotype	Rabbit / IgG
Species Reactivity	Human
Localization	Cytoplasmic

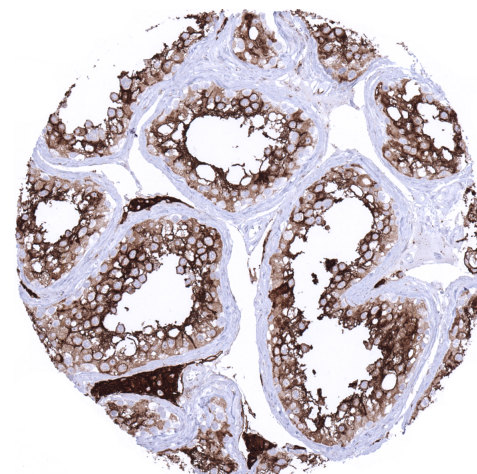
Storage & Stability	Antibody with azide – store at 2 to 8 C. Antibody without azide – store at -20 to -80 C. Antibody is stable for 24 months. Non-hazardous. No MSD required.
Supplied As	200ug/ml of Ab Purified from Bioreactor Concentrate by Protein A/G. Prepared in 10mM PBS with 0.05% BSA & 0.05% azide. Also available without BSA
Positive Control	Kidney: Cells of proximal tubuli should show a moderate to strong ACE2 immunostaining with accentuation of the staining at the apical membrane.
Negative Control	Kidney: Cells of distal tubuli and glomeruli should not show ACE2 immunostaining.



**Normal kidney showing strong ACE2 immunostaining of proximal tubuli with an accentuation of the staining to the apical membranes.**



**Clear cell renal cell carcinoma showing strong membranous ACE2 positivity.**



**Normal testis showing strong ACE2 positivity in Leydig cells and spermatocytes.**

### Biology

The Angiotensin-converting enzyme 2 gene (ACE2) is a dipeptidyl carboxypeptidase located at the surface of endothelial and other cells. The primary function of ACE2 is to counterbalance the Angiotensin-converting enzyme (ACE) by cleaving the carboxyl-terminal amino acid phenylalanine from angiotensin II and hydrolysing it into the vasodilator angiotensin. ACE2 is also involved in the regulation of membrane trafficking of proteins and therefore acts as the entry point into cells for several corona viruses. ACE2 is a key host cell receptor for the spike glycoprotein of the coronavirus causing COVID-19. In normal tissues, the strongest ACE2 immunostaining occurs in proximal tubuli of the kidney, Leydig cells and spermatocytes of the testis, corpus luteum of the ovary, and the surface epithelium of the small intestine and the gallbladder. A less intense ACE2 immunostaining is seen in heart muscle, sebaceous glands, placenta, surface epithelium of the colon, and at apical cell membranes of few alveolar pneumocytes, and a subset of respiratory epithelial cells, the fallopian tube, epididymis, and the seminal vesicle. Endothelial cells of small capillaries show a variable ACE2 positivity in an organ specific manner with highest expression levels in endocrine organs and the heart. In cancers, ACE2 immunostaining is most commonly seen in papillary and clear cell renal cell carcinoma (>90%), colorectal adenocarcinoma (>75%) and also occurs at a relevant frequency in gastric and pancreatic adenocarcinoma. At lower frequency, ACE2 expression can also be found in a large variety of other tumor entities.

### Potential Research Applications

-ACE2 is a key host cell receptor for the spike glycoprotein of the coronavirus HCoV-NL63 causing the coronavirus disease 2019 (COVID-19). As such, ACE2 immunostaining is a valuable tool for studies aiming at a better understanding of COVID-19.

-The clinical significance of ACE2 expression in cancers of various types is unknown.

### Protocol Suggestions

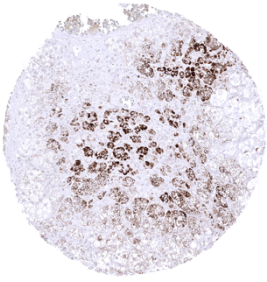
**Dilution: 1:150 ; pH 7,8 is optimal.** Freshly cut sections should be used (more than 10 days between cutting and staining deteriorates staining intensity for most antibodies in IHC).

### Limitations

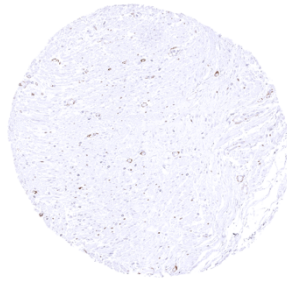
This antibody is available for **research use only** and is not approved for use in diagnostics.

### Warranty

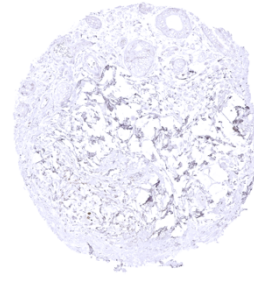
There are no warranties, expressed or implied, which extend beyond this description. MSVA is not liable for any personal injury or economic loss resulting from this product.



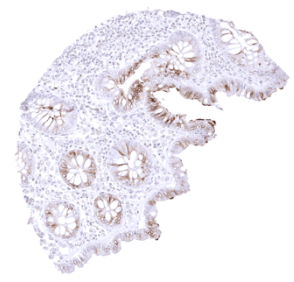
Adrenal gland - As ACE2 RNA expression is lacking in the adrenal gland, this antibody binding is considered a (tolerable) cross-reactivity



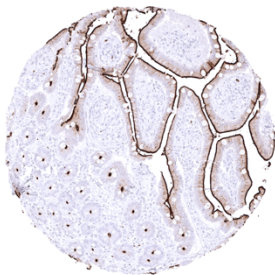
Appendix, muscular wall - A fraction of small capillaries shows a weak ACE2 staining



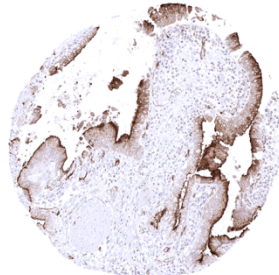
Breast



Colon descendens, mucosa - A weak to moderate ACE2 immunostaining occurs focally at the surface epithelium of the colorectum



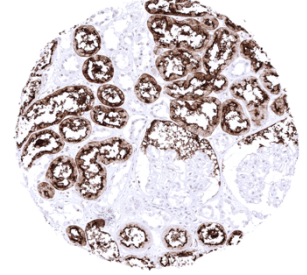
Duodenum, mucosa - A strong ACE2 immunostaining occurs at the surface epithelium of the small intestine



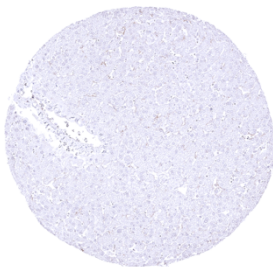
Gallbladder, epithelium - A strong ACE2 immunostaining is seen in the surface epithelium of the gallbladder



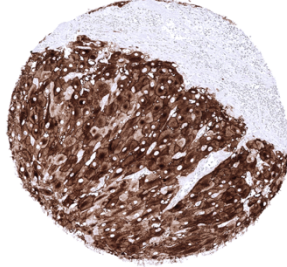
Ileum, mucosa - A strong ACE2 immunostaining occurs at the surface epithelium of the small intestine



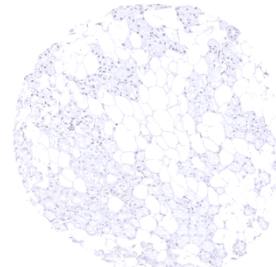
Kidney, cortex - A strong ACE2 immunostaining occurs in proximal tubuli of the kidney



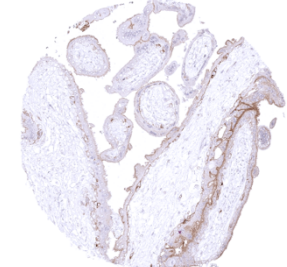
Liver



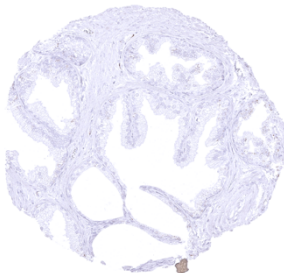
Ovary, corpus luteum - Strong ACE2 staining in the vast majority of cells



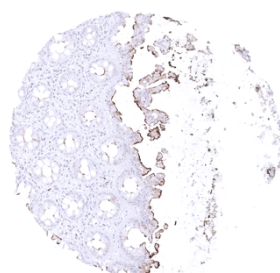
Parotid gland



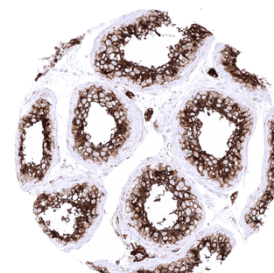
Placenta, early - A moderate ACE2 membranous immunostaining is seen in the cytotrophoblast while a weaker membranous staining may also be seen of the syncytiotrophoblast



Prostate



Rectum, mucosa - A weak to moderate ACE2 immunostaining occurs focally at the surface epithelium of the colorectum



Testis - Leydig cells and spermatocytes of the testis show a particularly strong ACE2 immunostaining in the testis



Tonsil