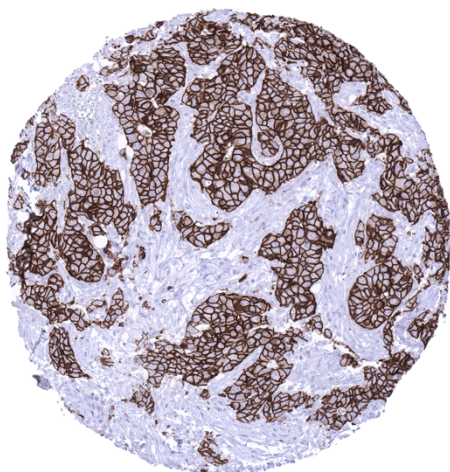


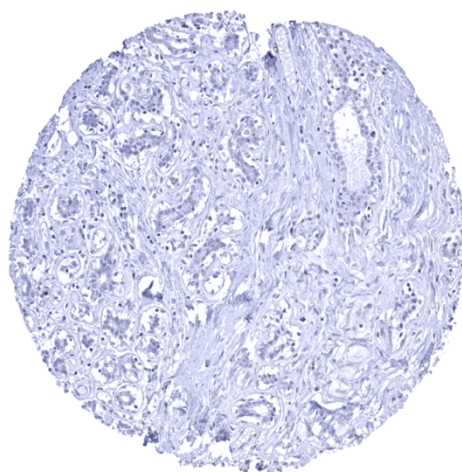
Anti- HER2 Antibody MSVA-340R / Recombinant Rabbit monoclonal

Human SwissProt	P04626
Human Gene Symbol	ERBB2
Synonyms	p185, CD340, Verb b2 Erythroblastic Leukemia Viral Oncogene Homolog 2, Neuro/Glioblastoma Derived Oncogene Homolog
Specificity	HER2
Immunogen	Recombinant extracellular domain of human HER-2 protein
Isotype	Rabbit / IgG
Species Reactivity	Human
Localization	Cell Surface

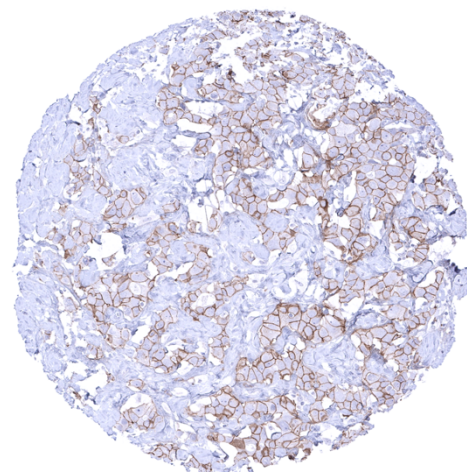
Storage & Stability	Antibody with azide – store at 2 to 8 C. Antibody without azide – store at -20 to -80 C. Antibody is stable for 24 months. Non-hazardous. No MSD required.
Supplied As	200ug/ml of Ab Purified from Bioreactor Concentrate by Protein A/G. Prepared in 10mM PBS with 0.05% BSA & 0.05% azide. Also available without BSA
Positive Control	Colon: Breast cancers with HER2 amplification should show strong positivity. Placenta: A faint staining should be seen at the surface membrane of the syncytiotrophoblast.
Negative Control	Breast: Normal epithelial cells must not show HER2 immunostaining.



Breast cancer of no special type (NST)- HER2- 3+.



HER2 staining is lacking in normal breast epithelial cells.



Breast cancer of no special type (NST)- HER2- 2+.

Biology

HER2, also termed erbB-2 (erythroblastic oncogene B), is a receptor tyrosine-protein kinase coded by the ERBB2 gene located at 17q21. In contrast, to other members of the ERBB-family, HER2 has no known ligand. HER2 acts through dimerization with the other three family members erbB1 (EGFR), erbB3, and erbB4. Dimerization initiates a variety of signaling pathways. HER2 expression occurs in many different tissues, but usually at rather low level. Because HER2 immunostaining is primarily used for detection of HER2 overexpressing tumors, it is typically calibrated in a way that it results in a detectable staining in only few normal tissues. Using such a "low sensitivity approach" a faint or weak membranous HER2 immunostaining can be seen (in some samples) at the basolateral membranes of colon apical mucosa, in luminal cells of atrophic prostate glands, basal cells of prostate glands, basal cells of seminal vesicle, and on apical membranes of the placenta. HER2 activation occurs in various tumors, mostly through gene amplification which results in high level overexpression. HER2 mutations occur less frequently but can also lead to permanent activation and dimerization in the absence of HER2 overexpression. HER2 is an ideal drug target because gene amplification leads to HER2 expression levels that are far higher than what can be observed in normal tissues. HER2 targeting drugs include trastuzumab (Herceptin), lapatinib, margetuximab, pertuzumab, and others.

Potential Research Applications

- The prevalence and extent of HER2 heterogeneity is unknown for most cancer types.
- New anti-HER2 drugs are under development.
- About 60% of HER2 positive cancers develop resistance to trastuzumab. Biomarkers are needed to predict trastuzumab resistance.

Protocol Suggestions

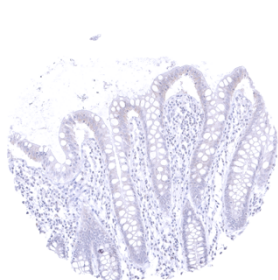
Dilution: 1:25. pH 7,8 is optimal. Freshly cut sections should be used (more than 10 days between cutting and staining deteriorates staining intensity for most antibodies in IHC).

Limitations

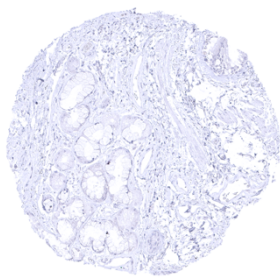
This antibody is available for **research use only** and is not approved for use in diagnostics.

Warranty

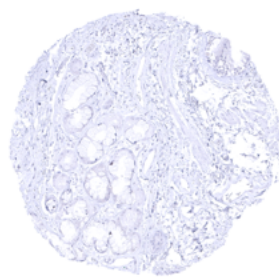
There are no warranties, expressed or implied, which extend beyond this description. MSVA is not liable for any personal injury or economic loss resulting from this product.



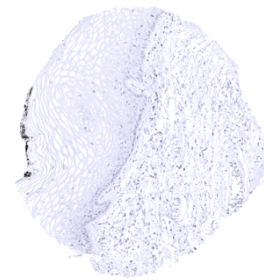
Appendix, mucosa - A very faint staining can be seen at the basolateral membranes of the superficial layers of appendical epithelium



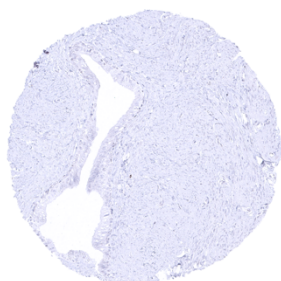
Bronchus, mucosa



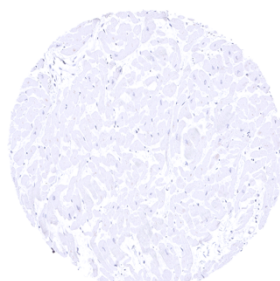
Colon descendens, mucosa



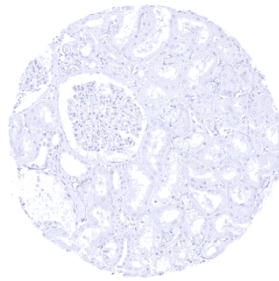
Ektocervix



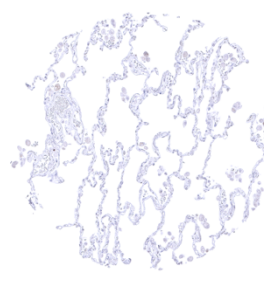
Epididymis



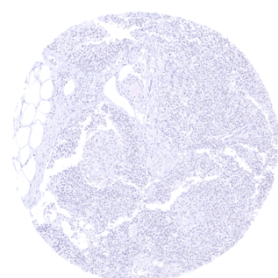
Heart



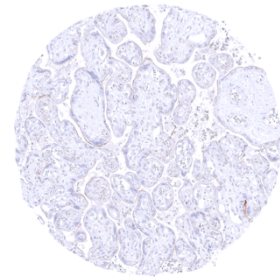
Kidney, cortex



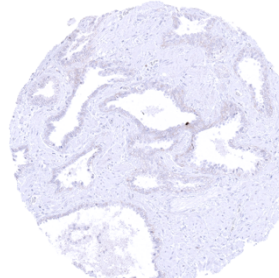
Lung



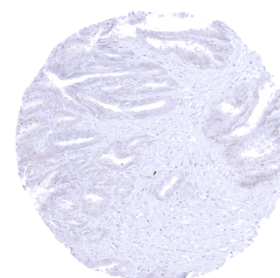
Lymph node



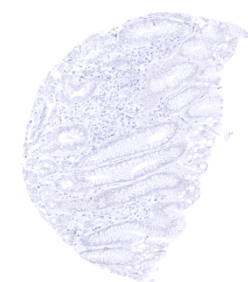
Placenta, mature - A weak to moderate HER2 staining occurs at the surface membrane of the mature placenta



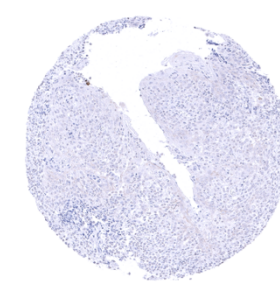
Prostate - A faint staining can be seen in basal cells of prostate glands, especially if they are atrophic



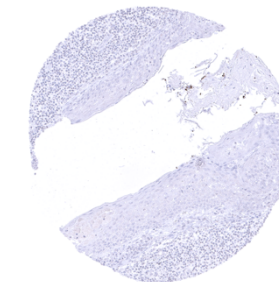
Seminal vesicle - A faint staining can be seen in a fraction of basal cells of seminal vesicles



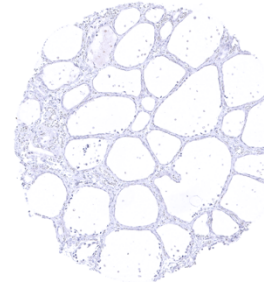
Stomach, corpus



Tonsil - A very faint staining of a fraction of epithelial cells occurs in tonsil crypts



Tonsil, surface epithelium



Thyroid gland