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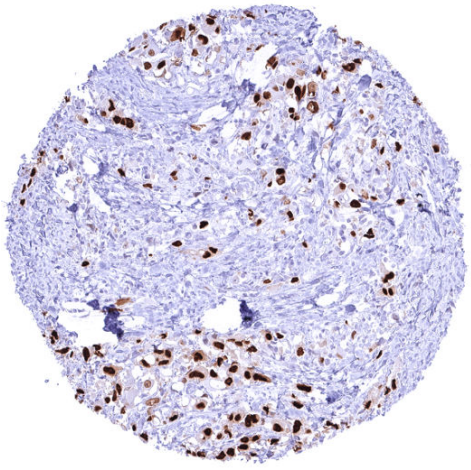
Revision 4.0

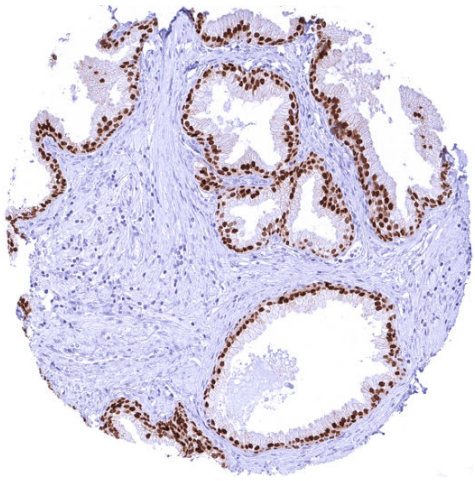
Anti- FOXA1 Antibody
HMV4726/ Recombinant Rabbit monoclonal

Human SwissProt	P55317
Human Gene Symbol	FOXA1
Synonyms	forkhead box A1 , HNF3A , TCF3A
Specificity	FOXA1
Immunogen	Recombinant human FOXA1fragment
Isotype	Rabbit / IgG
Species Reactivity	Human
Localization	Nuclear

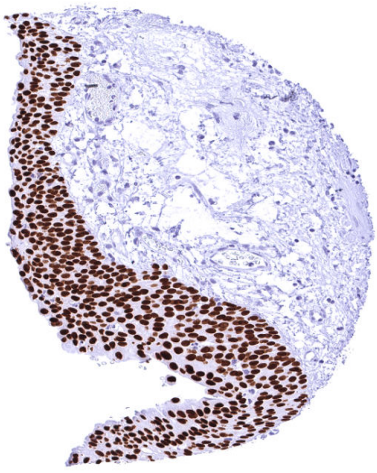
Storage & Stability	Antibody with azide – store at 2 to 8 C. Antibody without azide – store at -20 to -80 C. Antibody is stable for 24 months. Non-hazardous. No MSD required.
Supplied As	Purified antibody from Bioreactor Concentrate by Protein A/G. Prepared in 10mM PBS with <1% BSA & <0.1% azide. Antibody concentrate is optimized for dilution within dilution range using commercially available antibody diluent for IHC.
Positive Control	Colon: A strong nuclear FOXA1 staining should be seen in crypt cells the mucosa. The FOXA1 staining intensity should gradually decrease towards the surface epithelium.
Negative Control	Kidney: FOXA1 staining must not be seen in any cell type of the kidney.



Lobular breast cancer with strong nuclear FOXA1 staining of tumor cells.



Prostate with strong nuclear FOXA1 positivity of all epithelial cells.



Urinary bladder with intense nuclear FOXA1 staining of all urothelial cells.

Biology

The FOXA1 (Forkhead Box A1) gene, located at chromosome 14q21.1 codes for a critical "pioneer factor" protein. It binds to nucleosomal DNA, opens local chromatin, and recruits or stabilizes other transcription factors, several of which are hormone receptors or related proteins such as for example estrogen receptor, androgen receptor or GATA3. FOXA1 thereby establishes lineage-specific transcriptional programs in endoderm-derived organs (liver, lung, pancreas, prostate, mammary gland) and in luminal mammary epithelial cells. FOXA1 is essential for the development of several organs including pancreas, liver, prostate, and the lung. FOXA1 knockout mice survive embryogenesis but die postnatally with hypoglycaemia - due to a lack of glucagon - and other metabolic defects. Among normal tissues, FOXA1 staining is most intense in prostatic epithelium, urothelium, respiratory epithelium, and in a subset of breast epithelial cells. FOXA1 positivity also occurs in hepatocytes, intestinal epithelium, salivary glands, gallbladder epithelium, pneumocytes, fallopian tube, sebaceous cells of the skin, and in non-keratinizing squamous epithelium. In cancer, FOXA1 expression is mostly seen in prostate and breast cancer but it can also occur - at lower prevalence and often also at lower level - in various other cancer types. Somatic FOXA1 mutations, focal amplifications, and overexpression are recurrent in prostate, breast, lung, bladder and other cancers. The functional and clinical consequences of these alterations are not fully understood. Depending on the tumor type, both reduced and increased expression has been found to be related to aggressive cancer phenotype.

Potential Research Applications

-Prevalence and clinical significance of aberrant FOXA1 expression in different cancer types?
-Functional role of specific FOXA1 mutations?
-Which tumor contexts show FOXA1 as driver versus tumor suppressor?

Protocol Suggestions

Dilution: 1:100-200. 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.

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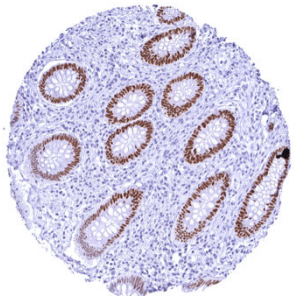
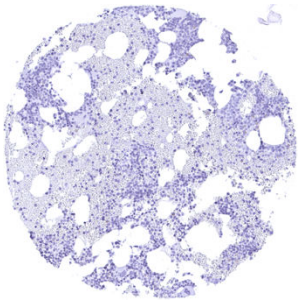
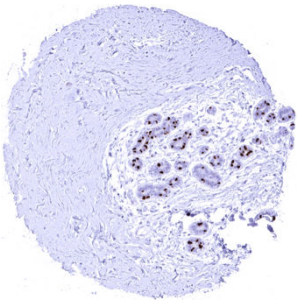


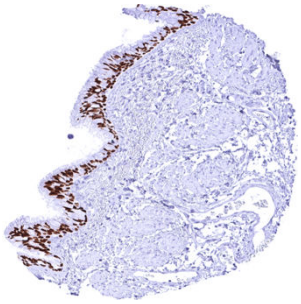
Appendix, mucosa – Strong nuclear FOXA1 staining of epithelial cells in the crypts. The staining intensity gradually decreases towards the surface epithelium.



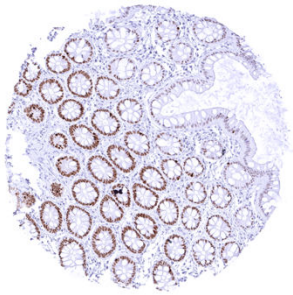
Bone marrow



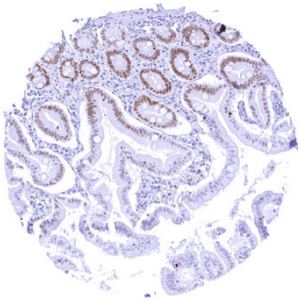
Breast – Intense nuclear FOXA1 staining of a subset of luminal epithelial cells.



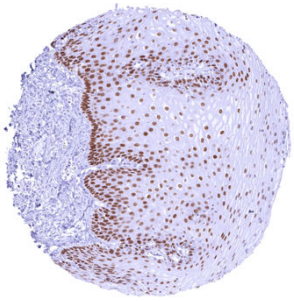
Bronchus, mucosa – Intense nuclear FOXA1 staining of all epithelial cells of the respiratory epithelium.



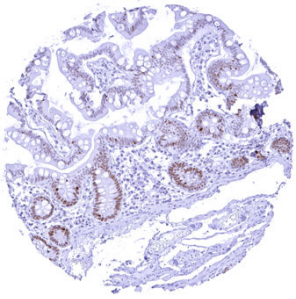
Colon descendens, mucosa



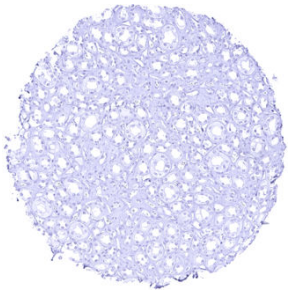
Duodenum, mucosa – Moderate to strong nuclear FOXA1 staining of crypt epithelial cells. The staining intensity gradually decreases towards the surface epithelium and the peaks of the villi.



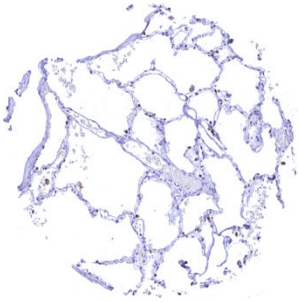
Esophagus, squamous epithelium – Distinct nuclear FOXA1 staining of the basal and suprabasal layers of the squamous epithelium. The staining intensity markedly decreases towards the more superficial cell layers.



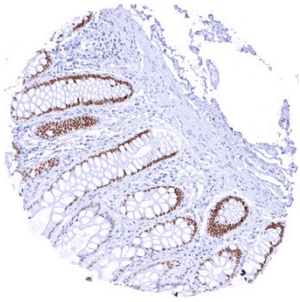
Ileum, mucosa – Moderate to strong nuclear FOXA1 staining of crypt epithelial cells. The staining intensity gradually decreases towards the surface epithelium and the peaks of the villi.



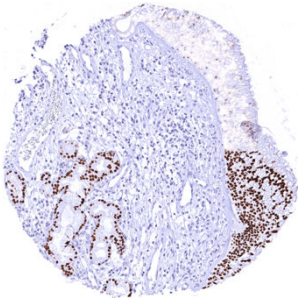
Kidney, medulla



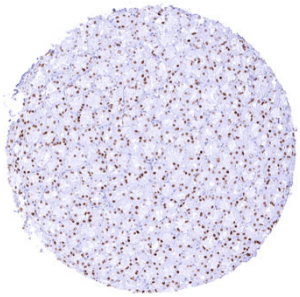
Lung



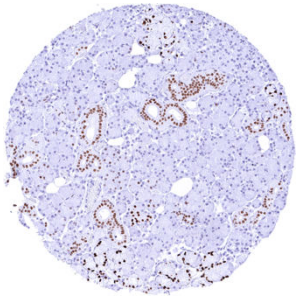
Rectum, mucosa – Strong nuclear FOXA1 staining of epithelial cells in the crypts. The staining intensity gradually decreases towards the surface epithelium.



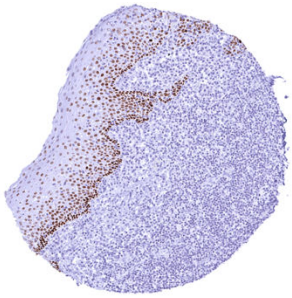
Sinus paranasales – Intense nuclear FOXA1 staining of all epithelial cells of the respiratory epithelium – and of bronchial glands.



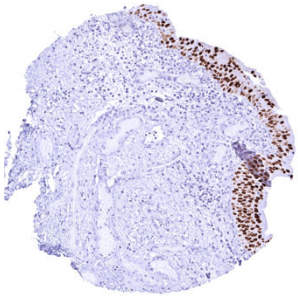
Stomach, corpus – Moderate to strong nuclear FOXA1 staining of glandular cells.



Submandibular gland – Strong nuclear FOXA1 staining of excretory ducts and of mucinous glands cells while serous glands are only faintly stained or FOXA1 negative.



Tonsil, surface epithelium – Distinct nuclear FOXA1 staining of a subset of squamous epithelial cells. The staining intensity gradually decreases towards the surface epithelium.



Urinary bladder, urothelium – Intense nuclear FOXA1 staining of urothelial cells.