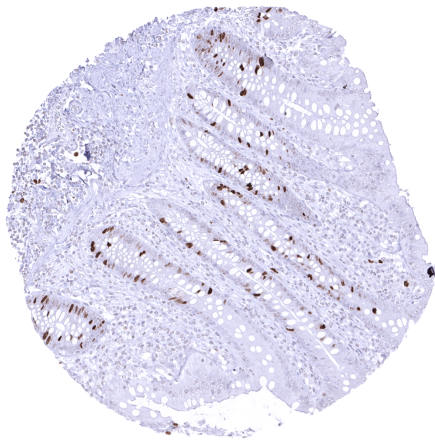


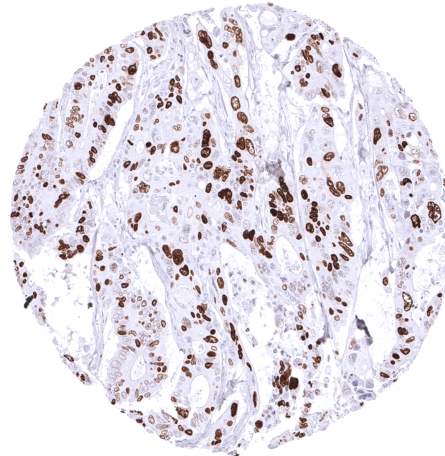
Anti- Topoisomerase 2-alpha (TOP2A) Antibody MSVA-802R / Recombinant Rabbit monoclonal

Human SwissProt	P11388
Human Gene Symbol	TOP2A
Synonyms	ATP hydrolyzing DNA topoisomerase II alfa; DNA gyrase; DNA topoisomerase (ATP hydrolyzing); DNA topoisomerase 2 alpha; DNA topoisomerase II 170kD; DNA topoisomerase II alpha; Topoisomerase DNA II alpha 170kDa; TP2A
Specificity	TOP2A
Immunogen	Recombinant fragment of human Topoisomerase II alpha
Isotype	Rabbit / IgG
Species Reactivity	Human
Localization	Nuclear

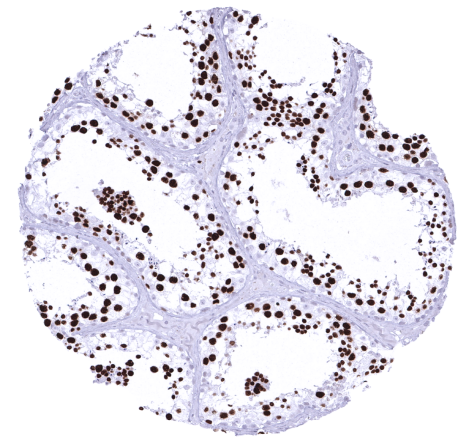
Storage & Stability	Antibody with azide – store at 2 to 8 C. Antibody without azide – store at -20 to -80 C. Antibody is stable for 24 months. Non-hazardous. No MSD required.
Supplied As	200ug/ml of Ab Purified from Bioreactor Concentrate by Protein A/G. Prepared in 10mM PBS with 0.05% BSA & 0.05% azide. Also available without BSA
Positive Control	Colon: A fraction of cells, especially in the crypt basis should show a moderate to strong nuclear TOPO2A immunostaining.
Negative Control	Colon: Epithelial cells should not show any TOPO2 staining in the cytoplasm and in most nuclei (especially in the surface epithelium).



TOPO2A positive cells in the appendix mucosa reflect proliferating cells.



Colon: Colorectal adenocarcinoma with TOPO2A immunostaining in >50% of tumor cells.



Spermatocyte of the testis – subject to meiosis - is the only normal cell type with a consistent strong TOPO2A expression in virtually all cells.

Biology

DNA topoisomerase 2-alpha (TOP2A) coded by the gene TOP2A at 17q21 is an enzyme localized to cell nuclei that influences the topologic states of DNA during RNA transcription. TOP2A is thus regularly expressed in proliferating cells in late S phase and G2-M phase where it specifically affects chromosome condensation and chromatid separation. It catalyzes the necessary breaking and rejoining of two strands of duplex DNA if altering the topology of DNA requires the DNA strands to pass through one another. TOP2A is the target for several anticancer agents including anthracycline and etoposide drugs. The TOP2A gene is located near HER2 locus at 17q12-q21 and is often coamplified with HER2. TOP2A amplification has been suspected to raise susceptibility of cancers to anthracyclines. Several TOP2A mutations have been associated with the development of drug resistance. In normal tissues, TOPO2A immunostaining can regularly be seen in the vast majority of organs with a distribution pattern consistent with proliferating cells. Accordingly, the pattern largely parallels the display of Ki67 immunostaining. Spermatocyte of the testis – subject to meiosis - is the only normal cell type with a consistent strong TOPO2A expression in virtually all cells. At least a fraction of tumor cells with TOPO2A immunostaining can be seen in the vast majority of cancers, with an intratumoral distribution consistent with proliferating cells. A TOPO2A positivity of near 100% of tumor cells occurs in tumors with very high proliferative activity or may be indicative of TOPO2A amplification which occurs preferably in breast, stomach, and urothelial cancer.

Potential Research Applications

- TOP2A expression may be predictive of prognosis and response to TOP2A inhibitors in various malignancies
- The TOP2A or Topo II labeling index representing the percentage of TOP2A positive staining nuclei may be similarly prognostic as the Ki67 LI.
- The best tool and cutoff values for TOP2A assessment are unknown.

Protocol Suggestions

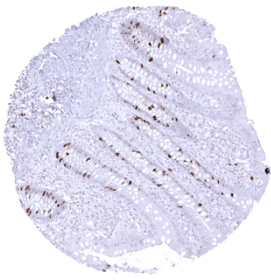
Dilution: 1:150 ; pH 7,8 is optimal. Freshly cut sections should be used (less than 10 days between cutting and staining deteriorates staining intensity for most antibodies in IHC).

Limitations

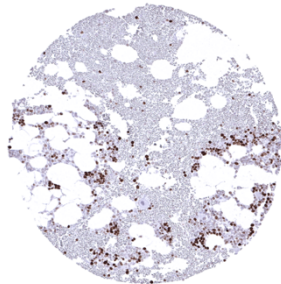
This antibody is available for **research use only** and is not approved for use in diagnostics.

Warranty

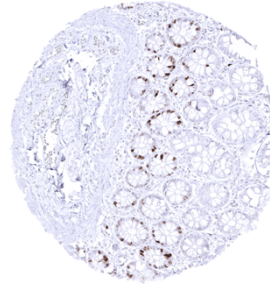
There are no warranties, expressed or implied, which extend beyond this description. MSVA is not liable for any personal injury or economic loss resulting from this product.



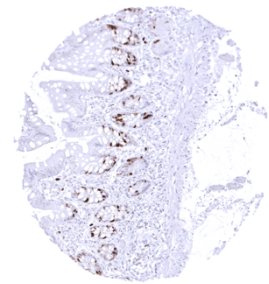
Appendix, mucosa- TOPO2A positive cells in the appendix mucosa reflect proliferating cells



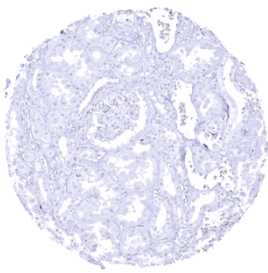
Bone marrow



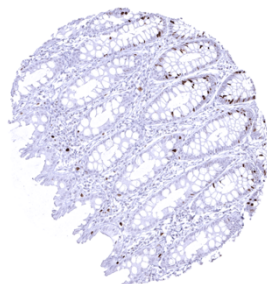
Colon, mucosa



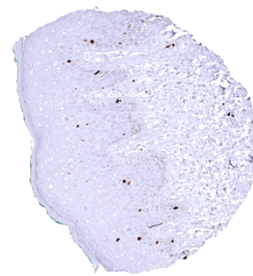
Ileum, mucosa- TOPO2A positive cells in the ileum mucosa reflect proliferating cells



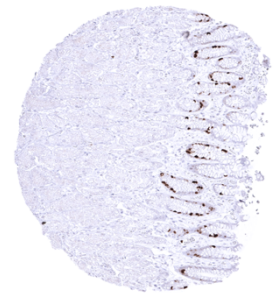
Kidney, cortex



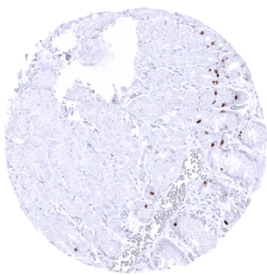
Rectum, mucosa



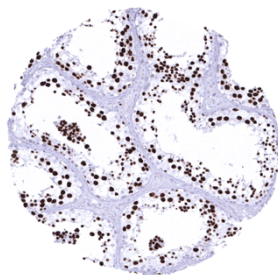
Skin- TOPO2A immunostaining is seen in proliferating cells



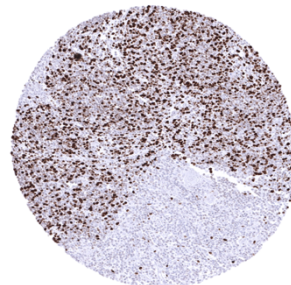
Stomach, antrum- TOPO2A positive cells in the stomach antrum reflect proliferating cells



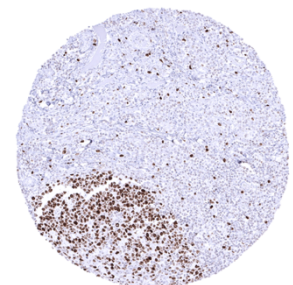
Stomach, corpus- TOPO2A positive cells in the stomach corpus reflect proliferating cells



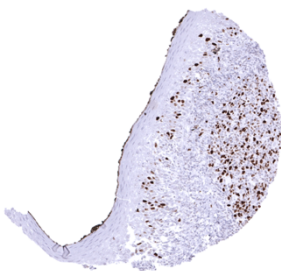
Testis- Spermatocyte of the testis – subject to meiosis - is the only normal cell type with a consistent strong TOPO2A expression in virtually all cells



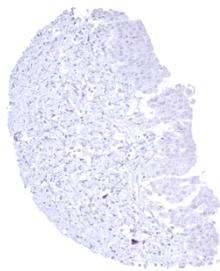
Thymus- The highest rate of TOPO2A positive lymphocytes is seen in the thymus (cortex)



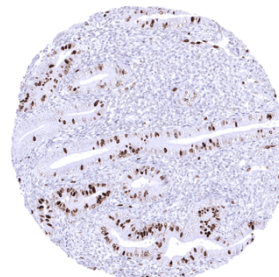
Tonsil- In the tonsil, TOPO2A positive lymphocytes are predominantly seen in germinal centres



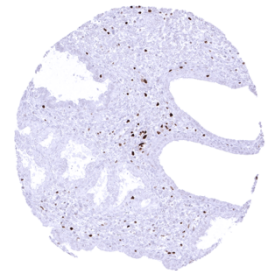
Tonsil, surface epithelium- In the tonsil, TOPO2A immunostaining can regularly be seen in epithelial cells and lymphocytes with a distribution pattern consistent with proliferating cells



Urinary bladder, urothelium



Uterus, endometrium (proliferation)



Uterus, endometrium (secretion)