PRODUCT INFORMATION

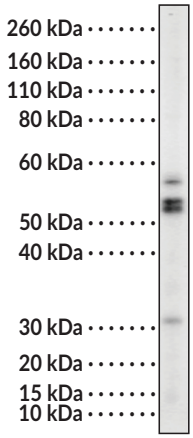
WT1 Rabbit Monoclonal Antibody (Clone RM516)

Item No. 42782

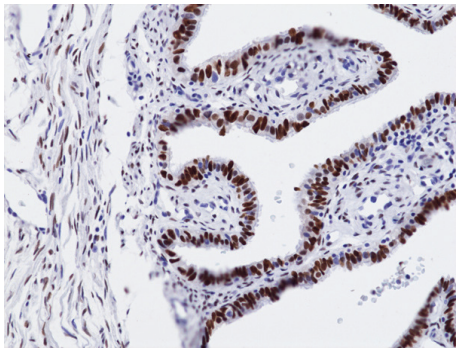
Overview and Properties

Contents:	This vial contains 100 µl of protein A-affinity purified monoclonal antibody.
Synonym:	Wilms Tumor Protein 1
Immunogen:	A peptide corresponding to residues near the N-terminus of human WT1
Cross Reactivity:	(+) WT1
Species Reactivity:	(+) Human
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥1 year
Storage Buffer:	PBS with 50% glycerol, 1% BSA, and 0.09% sodium azide
Clone:	RM504
Host:	Rabbit
Isotype:	IgG
Applications:	Immunohistochemistry (IHC) and Western blot (WB); the recommended starting dilution is 1:100-1:200 for IHC and 1:500-1:1,000 for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images



WB of K562 cell lysates using WT1 Rabbit Monoclonal Antibody (Clone RM516) at a 1:500 dilution.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human fallopian tube tissue using GCDFP-15 Rabbit Monoclonal Antibody (Clone RM504) at a dilution of 1:100 for one hour at room temperature.

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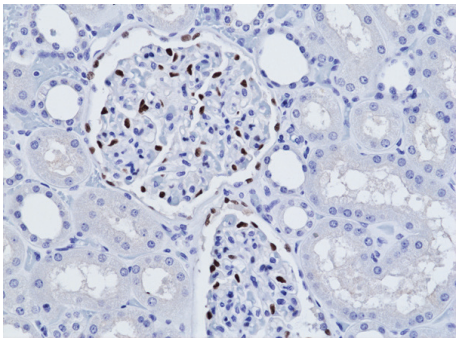
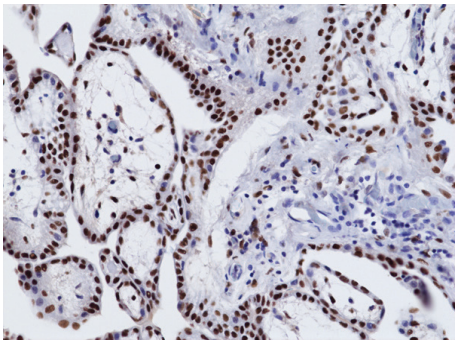
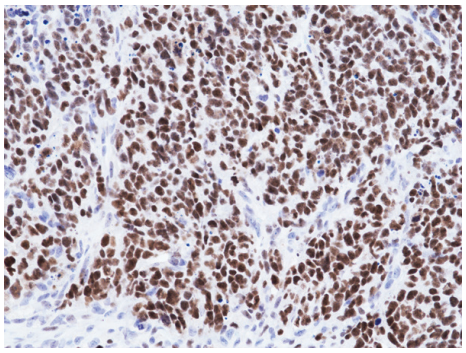
Images



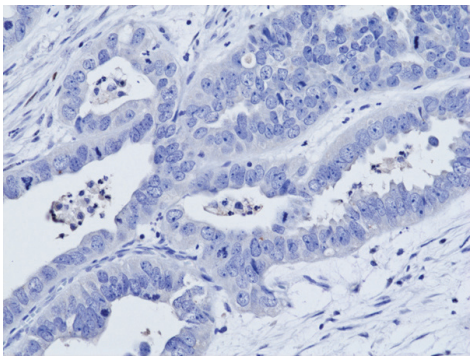
Immunohistochemical staining of formalin-fixed and paraffin-embedded human normal kidney tissue using WT1 Rabbit Monoclonal Antibody (Clone RM516) at a dilution of 1:100 for one hour at room temperature.



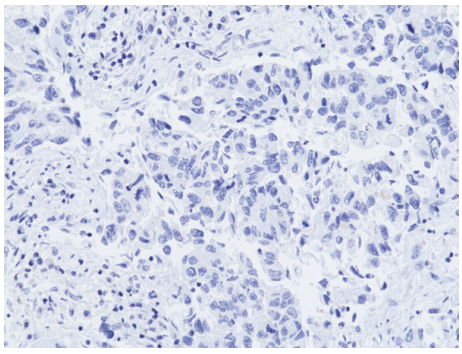
Immunohistochemical staining of formalin-fixed and paraffin-embedded human mesothelioma tissue using WT1 Rabbit Monoclonal Antibody (Clone RM516) at a dilution of 1:100 for one hour at room temperature.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human ovarian serous adenocarcinoma (positive control verified) tissue using WT1 Rabbit Monoclonal Antibody (Clone RM516) at a dilution of 1:100 for one hour at room temperature.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human ovarian serous adenocarcinoma (negative control verified) tissue using WT1 Rabbit Monoclonal Antibody (Clone RM516) at a dilution of 1:100 for one hour at room temperature.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human lung cancer (as negative control) tissue using WT1 Rabbit Monoclonal Antibody (Clone RM516) at a dilution of 1:100 for one hour at room temperature.

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Description

Wilms tumor protein 1 (WT1) is a transcription factor and member of the SP1 family of transcription factors.[1] It is composed of an N-terminal dimerization domain, a transcriptional repressor domain, a transactivation domain, and a C-terminal DNA/RNA-binding domain containing four zinc-finger motifs.[1,2] There are many isoforms of WT1 formed by various processes.[1] The most common isoforms contain or lack a lysine, threonine, and serine sequence (+KTS or -KTS) in the zinc-finger region, contain or lack 17 amino acids encoded by exon 5 (+17aa or -17aa), lack the KTS sequence but contain the 17-amino acid sequence (-KTS/+17aa), or contain both sequences (+KTS/+17aa).[1,3] WT1 is expressed in, and crucial for the development of, the genitourinary system, gonads, and adrenal glands.[2,3] WT1 binds to DNA and acts as a transcriptional repressor or activator in a context-dependent manner to modulate the expression of its targets, including *NR5A1/SF1*, which is involved in adrenal gland and gonadal development.[1,3] It also binds to and modulates mRNA splicing and stability.[1] Certain mutations in *WT1* disrupt differentiation of metanephric mesenchyme cells and are associated with Wilms tumor, a renal cancer primarily affecting children.[4] Other *WT1* mutations are associated with non-cancer pathologies, such as Frasier syndrome and Denys-Drash syndrome, which include genitourinary and gonadal development disruptions, as well as heart and central and peripheral nervous system disorders.[3,4] Cayman's WT1 Rabbit Monoclonal Antibody (Clone RM516) can be used for immunohistochemistry (IHC) and Western blot (WB) applications.

References

1. Torban, E. and Goodyer, P. Wilms' tumor gene 1: Lessons from the interface between kidney development and cancer. *Am. J. Physiol. Renal. Physiol.* **326(1)**, F3-F19 (2024).
2. Brown, K.W. and Malik, K.T. The molecular biology of Wilms' tumour. *Expert. Rev. Mol. Med.* 1-16 (2001).
3. Ferrari, M.T.M., Elias, F.M., Gomes, N.L.R.G., *et al.* WT1: A single gene associated with multiple and severe phenotypes. *Endocrinol. Metab.* **13**, 100143 (2023).
4. Morrison, A.A., Viney, R.L., Saleem, M.A., *et al.* New insights into the function of the Wilms tumor suppressor gene *WT1* in podocytes. *Am. J. Physiol. Renal. Physiol.* **295(1)**, F12-17 (2008).

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