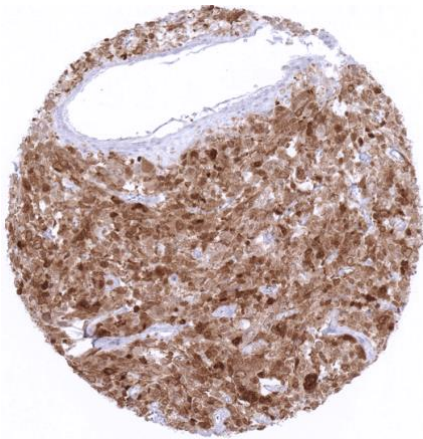


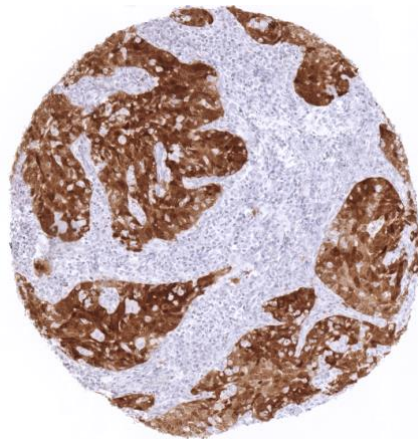
## Anti-p16 Antibody MSVA-016R / Recombinant Rabbit monoclonal

Human SwissProt	P42771
Human Gene Symbol	CDKN2A
Synonyms	CDK4 inhibitor p16 INK4; CDK4I; CDKN2A; Cell cycle negative regulator beta; CMM2; Cyclin dependent kinase 4 inhibitor A; Melanoma p16 inhibits CDK4; MLM; MTS1; Multiple tumor suppressor 1; p14; p16; p19; P19ARF; TP16
Specificity	P16
Immunogen	Recombinant peptide of human p16
Isotype	Rabbit / IgG
Species Reactivity	Human

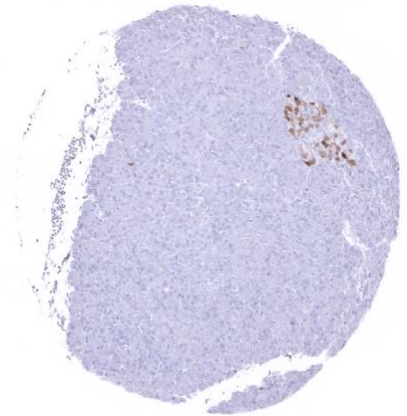
Localization	Nuclear and Cytoplasmic
Storage & Stability	Antibody with azide - store at 2 to 8°C. Antibody without azide - store at -20 to -80°C. Antibody is stable for 24 months. Non-hazardous. No MSD required.
Supplied As	Purified antibody in Tris pH 7,3-7,7 with 1% BSA, <0,1% NaN <sub>3</sub> .
Positive Control	Pancreas: at least a moderate staining is expected in islets of Langerhans
Negative Control	Pancreas (no staining in acinar cells), Normal cervix uteri (no staining, except – in some cases – occasional cells with weak positivity)



**Strong p16 expression in all cells of a leiomyosarcoma of the uterus.**



**Squamous cell carcinoma of the cervix uteri (HPV positive) with strong p16 immunostaining.**



**Moderate intensity p16 immunostaining of islets of Langerhans.**

### Biology

P16 is a tumor suppressor protein, which is up-regulated under several pathological conditions. P16 inhibits cell cycle progression from G1 to S phase through binding and inactivating cyclin dependent kinases CDK4 and CDK6 (8259215). In its cell cycle inhibiting function, p16 cooperates with the retinoblastoma (RB1) and the p53 tumor suppressor genes. In case of an inactivation of p53 or RB1 and especially in case of inactivation of both proteins, p16 can be markedly upregulated. A particularly strong up-regulation is seen in human papilloma virus (HPV) infected cells, where both p53 or RB1 are inactivated by the HPV proteins E5 and E6. In normal tissues, the strongest p16 staining can be seen in islets of Langerhans (pancreas) and in a large fraction of cells in the adenohypophysis. In all other normal tissues, p16 immunostaining is usually subtle. Few cells or small groups of cells showing weak to moderate p16 staining can occasionally be seen in various epithelial tissues. In the endometrium, complete glands can show weak, moderate or even strong p16 staining. In lymphatic tissues, a weak staining is seen in some macrophages in germinal centres and scattered p16 positive lymphocytes occur. In mature placenta, stroma cells can stain p16 positive in some but not all cases. Positive p16 staining can also be seen in some fibroblasts and endothelial cells of small blood vessels.

### Potential Research Applications

-A comprehensive study analyzing p16 expression in various different tumor entities would be helpful to assess the diagnostic significance of p16 IHC.

-The prognostic role of p16 alterations (overexpression, loss of expression) is of interest.

-P16 is an important interaction partner of several relevant cancer related pathways (p53, rb, others) and could thus be investigated together with other members of these pathways for a combined clinical impact.

### Protocol Suggestions

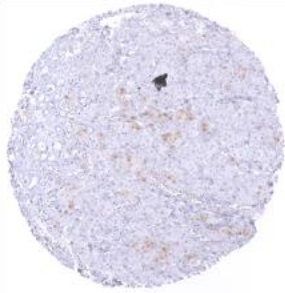
**Dilution: 1:150 ; pH 7,8 is optimal** (only weak staining is obtained at pH6,0). Freshly cut sections should be used (more than 10 days between cutting and staining deteriorates staining intensity for most antibodies in IHC).

### Limitations

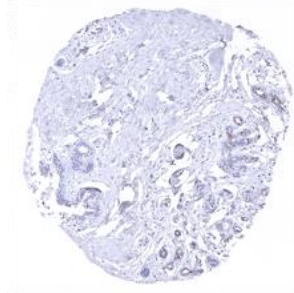
This antibody is available for **research use only** and is not approved for use in diagnostics. Not for resale without express authorization.

### Warranty

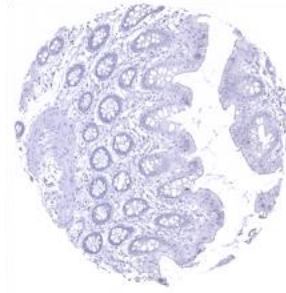
There are no warranties, expressed or implied, which extend beyond this description. MSVA is not liable for any personal injury or economic loss resulting from this product.



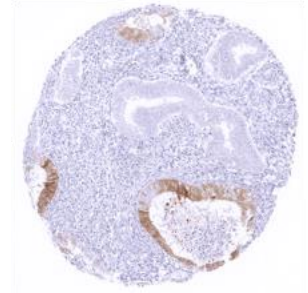
Adrenal gland - Individual cells or small groups of normally appearing adrenocortical cells can occasionally show a weak to moderate p16 immunostaining



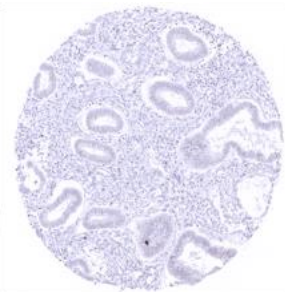
Breast - Few individual luminal epithelial cells with weak to moderate p16 immunostaining can occasionally occur



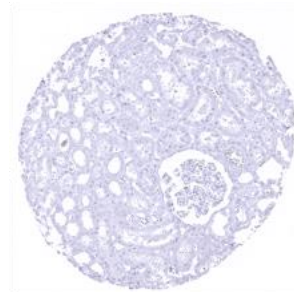
Colon descendens, mucosa



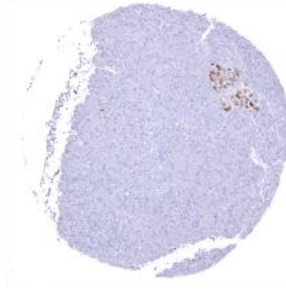
Endometrium, proliferation - Some glands with weak to moderate p16 immunostaining in the majority of cells can be seen in the histologically normal endometrium (not in all cases)



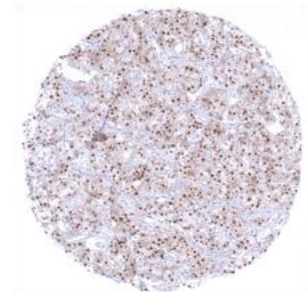
Endometrium, proliferation



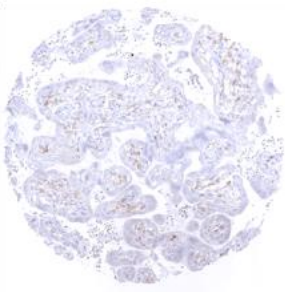
Kidney, cortex



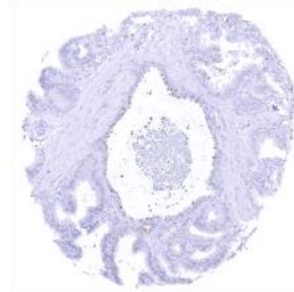
Pancreas



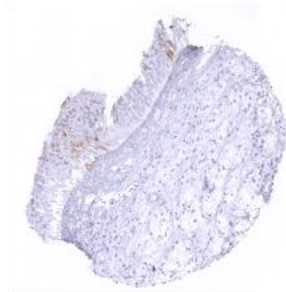
Pituitary, anterior lobe - A subset of cells of the adenohypophysis regularly show a moderate to strong p16 immunostaining



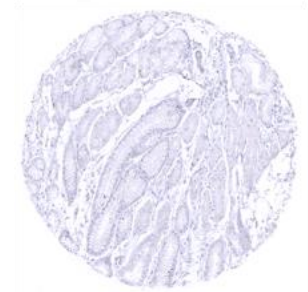
Placenta, mature A weak to moderate p16 immunostaining can occur in stroma cells of the placenta (only in individual cases)



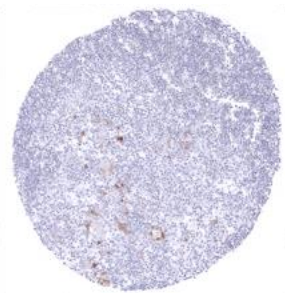
Seminal vesicle - Occasional coloration of the seminal vesicle epithelial cells is due to pigmentation (no true immunostaining)



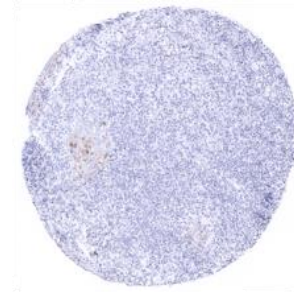
Sinus paranasales - Few individual cells or groups of cells with weak to moderate p16 immunostaining can occasionally occur in respiratory epithelium



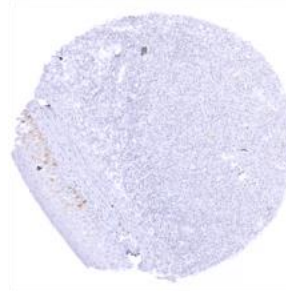
Stomach, antrum



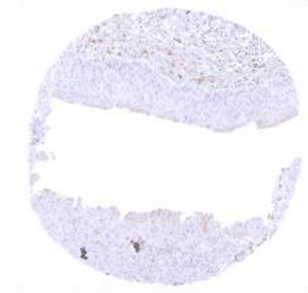
Thymus - Some elements of corpuscles of Hassall\_s stain p16 positive



Tonsil - Individual cells or small groups of normally appearing squamous epithelial cells of the crypts can occasionally show weak to moderate p16 immunostaining



Tonsil, surface epithelium - Individual cells or small groups of normally appearing cells with weak to moderate p16 immunostaining can occasionally occur in the surface epithelium



Urinary bladder, urothelium - Occasional cells or small groups of normally appearing cells with weak to moderate p16 immunostaining can occur in Urothelium (here-mostly umbrella cells). Very rarely, this also applies to few stroma cells such as in this case