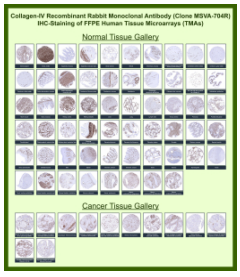
COL4A1 Antibody for IHC / Collagen type IV alpha 1 chain [clone MSVA-704R] (V6065)

Catalog No.	Formulation	Size
V6065-100UG	Antibody in 1X PBS with 0.05% BSA, 0.05% sodium azide	100 ug
V6065-20UG	Antibody in 1X PBS with 0.05% BSA, 0.05% sodium azide	20 ug

Recombinant RABBIT MONOCLONAL

Bulk quote request

Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG, kappa
Clone Name	MSVA-704R
UniProt	P02462, P08572, P29400, P53420
Localization	Basement membrane, Extracellular matrix, Extracellular space, Secreted
Applications	Immunohistochemistry : 1:100-1:200
Limitations	This COL4A1/Collagen type IV alpha 1 chain antibody is available for research use only.



COL4A1 Antibody for IHC Tissue Microarray (TMA). Immunohistochemistry analysis of Collagen type IV alpha 1 chain COL4A1 in formalin-fixed paraffin-embedded human normal and cancer tissue microarrays using recombinant rabbit monoclonal COL4A1 antibody clone MSVA-704R. Tissue microarray (TMA) staining with HRP-DAB brown chromogen demonstrates strong linear localization along basement membrane structures surrounding epithelial glands, vascular endothelium, and stromal interfaces, consistent with extracellular matrix distribution. In normal tissue microarrays, prominent basement membrane staining is observed in kidney, lung, gastrointestinal tract, and skin, while within tumor tissue microarrays, staining outlines preserved or disrupted basement membrane architecture in selected carcinomas. Evaluation across large TMA panels enables direct comparison of COL4A1 expression across diverse tissue types under standardized conditions. The observed staining patterns align with reported COL4A1 expression profiles in the Human Protein Atlas, supporting its use for basement membrane visualization and extracellular matrix studies.

Description

COL4A1 Antibody for IHC detects Collagen type IV alpha 1 chain, a major structural component of basement membranes encoded by the COL4A1 gene. This recombinant monoclonal antibody is designed for immunohistochemistry applications and enables evaluation of basement membrane integrity and extracellular matrix architecture in formalin-fixed tissue sections.

COL4A1 antibody, also referred to as Collagen IV antibody and Type IV collagen antibody in the literature, recognizes the alpha 1 chain that participates in formation of the Collagen IV heterotrimeric network. Collagen type IV alpha 1 associates with alpha 2 chains to form the predominant alpha 1 alpha 1 alpha 2 protomer found in most basement membranes. Unlike fibrillar collagens, Collagen IV forms a sheet-like scaffold that provides mechanical stability and structural compartmentalization between epithelial, endothelial, and stromal compartments. These networks interact with laminins, nidogens, and heparan sulfate proteoglycans to regulate cell adhesion, differentiation, migration, and barrier function.

COL4A1 is widely expressed in vascular basement membranes, kidney glomeruli, lung alveoli, skeletal muscle endomysium, and epithelial basement membrane zones across many organs. In immunohistochemical analyses, Collagen type IV alpha 1 typically demonstrates linear brown staining outlining blood vessels, glandular structures, and epithelial-stromal interfaces. This characteristic basement membrane pattern supports studies of angiogenesis, tumor invasion, and extracellular matrix remodeling in both developmental and disease contexts.

Pathogenic variants in COL4A1 have been linked to small vessel disease, cerebral hemorrhage susceptibility, ocular defects, and renal abnormalities. In cancer research, discontinuity or loss of Collagen IV staining may indicate basement membrane disruption and invasive potential. A COL4A1 Antibody for IHC can therefore assist in investigations of vascular pathology, basement membrane biology, and tissue microenvironment changes. This antibody targets Collagen type IV alpha 1 in research applications and is available from NSJ Bioreagents.

This antibody is also part of a broader collection of IHC antibodies validated by tissue microarray analysis, supporting consistent staining across normal and cancer tissues.

Application Notes

1. Optimal dilution of the COL4A1 antibody for IHC should be determined by the researcher.

2. This COL4A1/Collagen type IV alpha 1 chain antibody is recombinantly produced by expression in human HEK293 cells.

3. Manual Protocol: Freshly cut sections should be used (less than 10 days between cutting and staining). Heat-induced antigen retrieval for 5 minutes in an autoclave at 121oC in pH 7.8 Target Retrieval Solution buffer. Apply the antibody at a dilution of 1:150 at 37oC for 60 minutes. Visualization of bound antibody by the EnVision Kit (Dako, Agilent) according to the manufacturer's directions.

Immunogen

Purified human placental extract was used as the immunogen for the COL4A1 antibody for IHC.

Storage

COL4A1/Collagen type IV alpha 1 chain antibody with sodium azide - store at 2 to 8oC; antibody without sodium azide - store at -20 to -80oC.