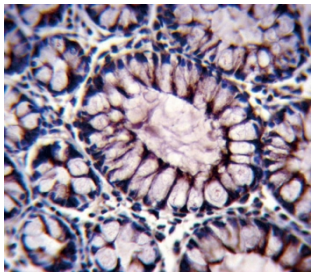
PIGR Antibody / Polymeric Ig Receptor Antibody (F54456)

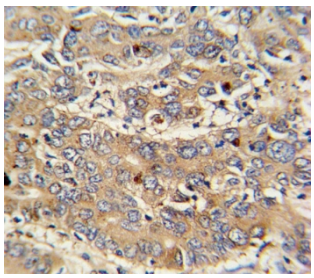
Catalog No.	Formulation	Size
F54456-0.4ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.4 ml
F54456-0.08ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.08 ml

Bulk quote request

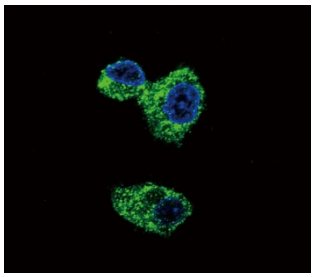
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity purified
UniProt	P01833
Applications	Flow cytometry: 1:25 per million cells Immunofluorescence: 1:25 Immunohistochemistry (FFPE): 1:25 Western blot: 1:500-1:2000
Limitations	This PIGR Antibody / Polymeric Ig Receptor Antibody is available for research use only.



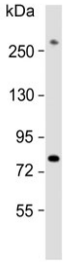
PIGR Antibody IHC Analysis of Human Colon Tissue. Immunohistochemical analysis of formalin-fixed, paraffin-embedded human colon tissue using Polymeric Ig Receptor Antibody. Prominent brown DAB staining is observed in the glandular epithelium, with cytoplasmic and membrane-associated immunoreactivity in intestinal epithelial cells. Heat-induced epitope retrieval (HIER) was performed by steaming tissue sections in citrate buffer (pH 6.0) for 20 minutes, followed by cooling before antibody incubation.



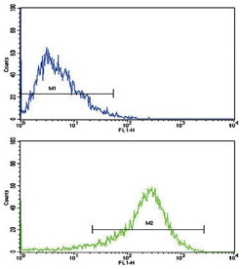
PIGR Antibody IHC Analysis of Human Hepatocarcinoma Tissue. Immunohistochemical analysis of formalin-fixed, paraffin-embedded human hepatocarcinoma tissue using Polymeric Ig Receptor Antibody. Brown DAB staining is observed in malignant hepatic cells, with predominantly cytoplasmic immunoreactivity throughout substantial portions of the tumor tissue. Heat-induced epitope retrieval (HIER) was performed by steaming tissue sections in citrate buffer (pH 6.0) for 20 minutes, followed by cooling before antibody incubation.



PIGR Antibody IF Analysis of Human HepG2 Cells. Immunofluorescence analysis of human HepG2 cells using Polymeric Ig Receptor Antibody. Green fluorescence demonstrates predominantly cytoplasmic and perinuclear staining, consistent with the intracellular trafficking of PIGR through membrane-associated transport compartments. Cell nuclei are counterstained with DAPI (blue).



PIGR Antibody WB Analysis of Human HepG2 Cells. Western blot analysis of human HepG2 cell lysate using Polymeric Ig Receptor Antibody. An immunoreactive band is detected that is consistent with the predicted molecular weight of PIGR at approximately 83 kDa.



PIGR Antibody FACS Staining of Human HepG2 Cells. Flow cytometry analysis of human HepG2 cells using Polymeric Ig Receptor Antibody. The antibody-stained population (green) exhibits increased fluorescence relative to the isotype control (blue), demonstrating antibody-associated staining in HepG2 cells.

Description

PIGR Antibody / Polymeric Ig Receptor Antibody recognizes the polymeric immunoglobulin receptor (PIGR), a transmembrane glycoprotein responsible for transporting polymeric immunoglobulins across epithelial barriers. PIGR plays a central role in mucosal immunity by facilitating the delivery of dimeric immunoglobulin A (IgA) and pentameric immunoglobulin M (IgM) from underlying tissues to mucosal surfaces. This transport mechanism helps establish protective antibody activity at epithelial interfaces exposed to microorganisms and environmental antigens.

PIGR is expressed primarily by polarized epithelial cells in mucosal tissues, including the gastrointestinal and respiratory tracts. Its extracellular region contains five immunoglobulin-like domains that participate in binding polymeric immunoglobulins through their associated joining (J) chain. The receptor also contains a transmembrane segment and a cytoplasmic tail that regulates intracellular trafficking. These structural features enable PIGR to recognize immunoglobulin cargo and direct its movement through specialized epithelial transport pathways.

Transport begins when polymeric IgA or IgM binds PIGR at the basolateral surface of epithelial cells. The receptor-immunoglobulin complex undergoes endocytosis and is transported through intracellular vesicular compartments toward the apical membrane. At the apical surface, proteolytic cleavage releases the extracellular portion of PIGR, known as the secretory component. This fragment remains associated with transported immunoglobulins, producing secretory IgA or secretory IgM. The secretory component contributes to the stability and protective properties of these antibodies within mucosal secretions.

PIGR expression is influenced by inflammatory cytokines, microbial signals, and epithelial differentiation. Cytokines such as interferon gamma and tumor necrosis factor alpha can regulate receptor expression through signaling pathways associated with inflammatory responses. These mechanisms allow epithelial tissues to adjust immunoglobulin transport in response to local immune activity. Altered PIGR expression has also been investigated in chronic inflammatory conditions and epithelial malignancies, where changes in receptor abundance may reflect disrupted epithelial differentiation or mucosal immune function.

Beyond its role in antibody transport, PIGR contributes to communication between epithelial barriers and the adaptive immune system. Its regulated expression and proteolytic processing are important for maintaining secretory antibody availability and epithelial defense. Research involving PIGR Antibody can help characterize the molecular mechanisms of immunoglobulin transcytosis, secretory component production, and mucosal immune homeostasis.

Explore our Immunology Antibodies for additional targets involved in mucosal immunity, immunoglobulin transport, epithelial barrier defense, and the regulation of secretory antibody responses.

Application Notes

The stated application concentrations are suggested starting points. Titration of the PIGR Antibody / Polymeric Ig Receptor Antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

A portion of amino acids 646-672 from the human protein was used as the immunogen for the PIGR antibody.

Storage

Aliquot the PIGR antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

Alternate Names

Polymeric immunoglobulin receptor antibody, Poly-Ig receptor antibody, Polymeric Ig receptor antibody, Secretory component antibody, Hepatocellular carcinoma-associated protein TB6 antibody, Polyimmunoglobulin receptor antibody

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