Human pIgR Antibody

Monoclonal Mouse IgG_3 Clone # 825724

Catalog Number: MAB2717

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human pIgR in direct ELISAs and Western blots. In direct ELISAs, no cross-reactivity with recombinant mouse pIgR is observed.
Source	Monoclonal Mouse IgG_3 Clone # 825724
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human pIgR Lys19-Arg638 Accession # CAA51532
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 μm filtered solution in PBS.

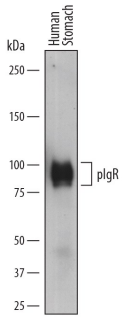
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Western Blot	0.25 µg/mL	See Below
Simple Western	2.5 µg/mL	See Below

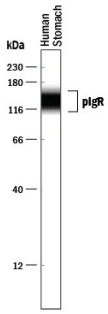
DATA

Western Blot



Detection of Human pIgR by Western Blot. Western blot shows lysates of human stomach tissue. PVDF membrane was probed with 0.25 µg/mL of Mouse Anti-Human pIgR Monoclonal Antibody (Catalog # MAB2717) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF018). A specific band was detected for pIgR at approximately 85-100 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Simple Western



Detection of Human pIgR by Simple Western™. Simple Western lane view shows lysates of human stomach tissue, loaded at 1 mg/mL. A specific band was detected for pIgR at approximately 110-150 kDa (as indicated) using 2.5 µg/mL of Mouse Anti-Human pIgR Monoclonal Antibody (Catalog # MAB2717). This experiment was conducted under reducing conditions and using the 12-230 kDa separation system.

PREPARATION AND STORAGE

Reconstitution	Sterile PBS to a final concentration of 0.5 mg/mL.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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Human pIgR Antibody

Monoclonal Mouse IgG_3 Clone # 825724

Catalog Number: MAB2717

BACKGROUND

The human polymeric immunoglobulin receptor (pIgR; also known as membrane secretory component) is an approximately 100 kDa type I transmembrane glycoprotein that is synthesized as a 764 amino acid (aa) precursor. It includes a signal sequence (aa 1-18), an extracellular region (aa 19-638), a transmembrane segment (aa 639-661), and a cytoplasmic domain (aa 662-764) (1-3). The extracellular region consists of five Ig-like domains and a sixth non-Ig domain that connects to the membrane region. pIgR is expressed on secretory epithelial cells of exocrine tissues. Immunoglobulin isotypes consist of two heavy (H) and two light (L) chains. For IgA and IgM, this H_2L_2 monomer can form larger polymers through association with a joining chain (J chain). The Fc regions of IgA and IgM have a carboxy-terminal extension called a secretory tailpiece that binds the J chain (4). pIgR functions as a carrier that transports IgA and IgM across epithelium (5). On the basolateral surface of epithelial cells, the receptor initially binds non-covalently to IgA via a docking site on the J chain. This initiates a rearrangement in which a disulfide bond forms between pIgR and an IgA heavy chain (2). The complexes are then internalized and transcytosed to the apical surface. A soluble covalent complex called secretory IgA (SIgA) is now generated by proteolytic cleavage of the sixth extracellular domain of pIgR and released into the lumen (6). This IgA-bound and proteolytically generated pIgR fragment is referred to as secretory component (SC). Notably, human pIgR transcytoses constitutively, with or without ligand, creating both bound and free, 78 kDa SC following cleavage (3). The extracellular region of pIgR shares 64%, 65%, and 70% aa sequence identity with the equivalent region of rat, mouse and porcine pIgR, respectively. The receptor component of the complex anchors the SIgA molecule to mucous (7). SIgA is a crucial component of the mucosal immune system serving to protect the large expanse of mucous membranes that form a barrier between the interior of the body and the external environment (8).

References:

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