

## DESCRIPTION

<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human Lipocalin-2/NGAL in direct ELISAs and Western blots. In direct ELISAs and Western blots, this antibody does not cross-react with recombinant human (rh) Lipocalin-1 or rmLipocalin-2. This antibody also recognizes human Lipocalin-2/MMP-9 complexes in Western blots under non-reducing conditions.
<b>Source</b>	Monoclonal Rat IgG <sub>2A</sub> Clone # 220310
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	Mouse myeloma cell line NS0-derived recombinant human Lipocalin-2/NGAL Gln21-Gly198 Accession # P80188
<b>Formulation</b>	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.

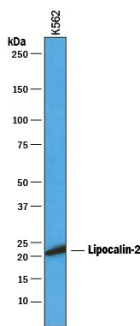
## APPLICATIONS

**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.

	<b>Recommended Concentration</b>	<b>Sample</b>
<b>Western Blot</b>	0.2-1 µg/mL	See Below
<b>Immunohistochemistry</b>	8-25 µg/mL	See Below

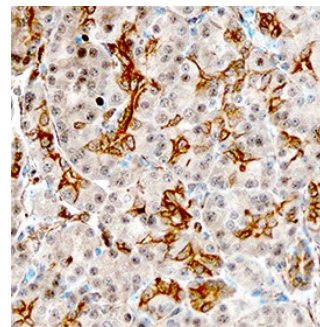
## DATA

### Western Blot



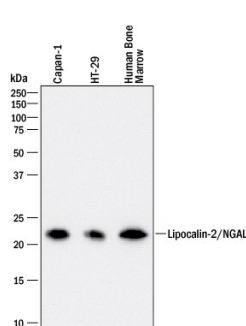
**Detection of Human Lipocalin-2/NGAL by Western Blot.** Western blot shows lysates of K562 human chronic myelogenous leukemia cell line. PVDF membrane was probed with 1 µg/mL of Rat Anti-Human Lipocalin-2/NGAL Monoclonal Antibody (Catalog # MAB1757) followed by HRP-conjugated Anti-Rat IgG Secondary Antibody (Catalog # HAF005). A specific band was detected for Lipocalin-2/NGAL at approximately 22 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

### Immunohistochemistry



**Lipocalin-2/NGAL in Human Pancreas.** Lipocalin-2/NGAL was detected in immersion fixed paraffin-embedded sections of human pancreas using Rat Anti-Human Lipocalin-2/NGAL Monoclonal Antibody (Catalog # MAB1757) at 15 µg/mL overnight at 4 °C. Tissue was stained using the Anti-Rabbit HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS005) and counterstained with hematoxylin (blue). Specific staining was localized to plasma membrane of ductal cells. View our protocol for [Chromogenic IHC Staining of Paraffin-embedded Tissue Sections](#).

### Western Blot



**Detection of Human Lipocalin-2/NGAL by Western Blot.** Western blot shows lysates of Capan-1 human pancreatic adenocarcinoma cell line, HT-29 human colon adenocarcinoma cell line, and human bone marrow tissue. PVDF membrane was probed with 0.2 µg/mL of Rat Anti-Human Lipocalin-2/NGAL Monoclonal Antibody (Catalog # MAB1757) followed by HRP-conjugated Anti-Rat IgG Secondary Antibody (Catalog # HAF005). A specific band was detected for Lipocalin-2/NGAL at approximately 22 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

## PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.5 mg/mL in sterile PBS.
<b>Shipping</b>	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
<b>Stability &amp; Storage</b>	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <ul style="list-style-type: none"> <li>• 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>• 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

**BACKGROUND**

Members of Lipocalin family share a highly conserved fold with an eight-stranded antiparallel  $\beta$  barrel, and act as transporters, carrying small molecules to specific cells (1). Lipocalin-2, also known as Neutrophil Gelatinase-Associated Lipocalin (NGAL), was originally identified as a component of neutrophil granules (2). It is a 25 kDa protein existing in monomeric and homo- and heterodimeric forms, the latter as a dimer with human neutrophil gelatinases (MMP-9) (2). Its expression has been observed in most tissues normally exposed to microorganism, and its synthesis is induced in epithelial cells during inflammation (3). Lipocalin-2 has been implicated in a variety of processes including cell differentiation, tumorigenesis, and apoptosis (3-5). Studies indicate that Lipocalin-2 binds a bacterial catecholate siderophore bound to ferric ion such as enterobactin with a subnanomolar dissociation constant ( $K_d = 0.41$  nM) (6). The bound ferric enterobactin complex breaks down slowly in a month into dihydroxybenzoyl serine and dihydroxybenzoic acid (DHBA). It also binds to a ferric DHBA complex with much less  $K_d$  values (7.9 nM) (6). Secretion of Lipocalin-2 in immune cells increases by stimulation of Toll-like receptor as an acute phase response to infection. As a result, it acts as a potent bacteriostatic reagent by sequestering iron (7). Moreover, Lipocalin-2 can alter the invasive and metastatic behavior of Ras-transformed breast cancer cells in vitro and in vivo by reversing epithelial to mesenchymal transition inducing activity of Ras, through restoration of E-cadherin expression, via effects on the Ras-MAPK signaling pathway (8).

**References:**

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4. Devireddy, L.R. *et al.* (2001) Science **293**:829.
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6. Goetz, D.H. *et al.* (2002) Mol. Cell **10**:1033.
7. Flo, T.H. *et al.* (2004) Nature **432**:917.
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