

Human Lipocalin-2/NGAL Antibody

Monoclonal Rat IgG_{2A} Clone # 220310 Catalog Number: MAB1757

DESCRIPTION		
Species Reactivity	Human	
Specificity	Detects human Lipocalin-2/NGAL in direct ELISAs and Western blots. In direct ELISAs and Western blots, this antibody does not cross-reac with recombinant human (rh) Lipocalin-1 or rmLipocalin-2. This antibody also recognizes human Lipocalin-2/MMP-9 complexes in Western blot under non-reducing conditions.	
Source	Monoclonal Rat IgG _{2A} Clone # 220310	
Purification	Protein A or G purified from hybridoma culture supernatant	
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Lipocalin-2/NGAL Gln21-Gly198 Accession # P80188	
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 either lyophilized or as a 0.2 µm filtered solution in PBS.	

APPLICATIONS

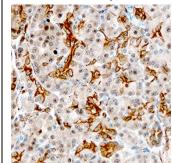
Please Note: Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.

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

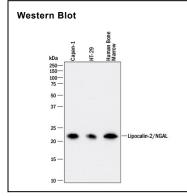
DATA

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.



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

Reconstitution Reconstitute at 0.5 mg/mL in sterile PBS.

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

Rev. 2/7/2018 Page 1 of 2





Human Lipocalin-2/NGAL Antibody

Monoclonal Rat IgG_{2A} Clone # 220310 Catalog Number: MAB1757

BACKGROUND

Members of Lipocalin family share a highly conserved fold with an eight-stranded antiparallel β barrel, and act as a 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 sidropore 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:

- 1. Flower, D.R. et al. (1994) FEBS Lett. 354:7.
- 2. Kjeldsen, L. et al. (1993) J. Biol. Chem. 268:10426
- 3. Kjeldsen L, et al. (2000) Biochim Biophys Acta. 1482:272.
- Devireddy, L.R. et al. (2001) Science 293:829.
- 5. Yang, M.B. et al. (2002) Mol. Cell. 10:1045.
- Goetz, D.H. et al. (2002) Mol. Cell 10:1033.
- Flo, T.H. et al. (2004) Nature 432:917.
- 8. Hanai, J. et al. (2005) J. Biol. Chem. 280:13641.

