

## DESCRIPTION

<b>Species Reactivity</b>	Rat
<b>Specificity</b>	Detects rat Lipocalin-2/NGAL in ELISAs and detects rat and mouse Lipocalin-2/NGAL in Western blots. In sandwich ELISAs, less than 0.4% cross-reactivity with recombinant mouse Lipocalin-2 is observed and less than 0.2% cross-reactivity with recombinant human (rh) Lipocalin-1 and rhLipocalin-2 is observed.
<b>Source</b>	Polyclonal Goat IgG
<b>Purification</b>	Antigen Affinity-purified
<b>Immunogen</b>	Mouse myeloma cell line NS0-derived recombinant rat Lipocalin-2/NGAL Gln21-Asn198 Accession # P30152
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

## 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>	0.1 µg/mL	Recombinant Rat Lipocalin-2/NGAL (Catalog # 3508-LC)
<b>Rat Lipocalin-2 Sandwich Immunoassay</b>		<b>Reagent</b>
<b>ELISA Capture</b>	0.2-0.8 µg/mL	Rat Lipocalin-2/NGAL Antibody (Catalog # AF3508)
<b>ELISA Detection</b>	0.1-0.4 µg/mL	Rat Lipocalin-2/NGAL Biotinylated Antibody (Catalog # BAF3508)
<b>Standard</b>		Recombinant Rat Lipocalin-2/NGAL (Catalog # 3508-LC)

## PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.2 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.
<b>Stability &amp; Storage</b>	<p><b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b></p> <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

Lipocalin-2, also known as neutrophil gelatinase-associated Lipocalin and uterocalin (NGAL), has been implicated in a variety of processes including cell differentiation, tumorigenesis, and apoptosis (1-3). It binds a bacterial catechololate siderophore bound to ferric ion such as enterobactin with a subnanomolar dissociation constant ( $K_D = 0.41$  nM) (4). 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) (4). Secretion of Lipocalin-2 in immune cells increases by stimulation of Toll-like receptor as a acute phase response to infection. As a result, it acts as a potent bacteriostatic reagents by sequestering iron (5). 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 (6). In the kidney, Lipocalin-2-mediated iron trafficking may be involved in protection from renal injury, and it has been implicated as a marker for early kidney failure (7, 8).

### References:

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6. Hanai, J. *et al.* (2005) *J. Biol. Chem.* **280**:13641.
7. Mori, K. *et al.* (2005) *J. Clin. Invest.* **115**:610.
8. Mishra, J. *et al.* (2005) *Lancet* **365**:1231.