

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse Heparin in direct ELISA.
Source	Monoclonal Rat IgG _{2A} Clone # 968001
Purification	Protein A or G purified from cell culture supernatant
Immunogen	Synthetic peptide containing mouse Heparin Accession # Q9EQ21
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.

ELISA This antibody functions as an ELISA detection antibody when paired with Rat Anti-Mouse Heparin Monoclonal Antibody (Catalog # MAB95051).

This product is intended for assay development on various assay platforms requiring antibody pairs.

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. <ul style="list-style-type: none"> ● 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.

BACKGROUND

Heparin, also known as Liver Expressed Antimicrobial Protein 1 (LEAP-1), is a peptide hormone that is involved in the regulation of iron metabolism (1, 2). It is synthesized as a prohormone that is cleaved intracellularly and secreted as a mature 25 amino acid peptide (1, 3, 4). Heparin contains eight cysteine residues that form four disulfide bonds which appear to be important for stability in biological fluids (5). It is predominantly expressed, processed, and secreted by hepatocytes (2, 6). Heparin expression is positively regulated by inflammation via IL-6/JAK2/ STAT3 signaling, endoplasmic reticulum stress, and BMP-6 (7-11). BMP-6-dependent Heparin induction involves RGM-C/Hemojuvelin, which acts as a co-receptor for BMP-6 (11-13). Conversely, Heparin expression is negatively regulated by MMP-15/MT2-MMP and multiple erythropoietic stimuli, including anemia, hypoxia, and Erythropoietin (14-18). MMP-15 downregulates Heparin expression by interacting with and cleaving RGM-C (19). Heparin was originally identified in human blood and urine as an antimicrobial peptide (1, 3). It has since been shown to regulate iron metabolism. Heparin binds the cellular iron exporter Ferroportin, and this interaction results in Ubiquitin-mediated degradation of both Heparin and Ferroportin (20-22). Degradation of Ferroportin results in reduced iron release from macrophages, hepatocytes, and duodenal enterocytes, suggesting that Heparin may be an effector of inflammatory hypoferrremia (20).