Direct-Blot™ HRP anti-HMGB1 Antibody

Catalog# / Size	651411 / 25 µL 651412 / 100 µL
Clone	3E8
Regulatory Status	RUO
Other Names	High mobility group protein 1, High mobility group protein B1, Sulfoglucuronyl carbohydrate binding protein
Isotype	Mouse IgG2b, κ
Description	High mobility group protein B1 (HMGB1) belongs to a family of highly conserved proteins that contain HMG box domains. Human HMGB1 is expressed as a 215 amino acid (aa) single chain polypeptide containing three domains: two N-terminal globular, 70 aa positively charged DNA binding domains (HMG boxes A and B), and a negatively charged 30 aa C-terminal region that contains only Asp and Glu. Human HMGB1 is 100% aa identical to canine HMGB1 and 99% aa identical to mouse, rat, bovine and porcine HMGB1. HMGB1 is a widely expressed and highly abundant protein. It was originally discovered as a nuclear protein that could bend DNA. Such bending stabilizes nucleosome formation and regulates the expression of select genes upon recruitment by DNA binding proteins. It is now known that HMGB1 also plays a significant role in extracellular signaling associated with inflammation. HMGB1 is massively released into the extracellular environment during cell necrosis. It acts as an inflammatory mediator that promotes monocyte migration and cytokine secretion, and as a mediator of T cell-dendritic cell interaction. In addition, activated monocytes, macrophages, and dendritic cells also secrete HMGB1, forming a positive feedback loop that results in the release of additional cytokines and neutrophils. The cytokine activity of HMGB1 is restricted to the HMG B box, while the A box is associated with the helix-loop-helix domain of transcription factors. Although HMGB1 does not possess a classic signal sequence, it appears to be secreted as an acetylated form via secretory endolysosome exocytosis. Once secreted, HMGB1 transduces cellular signals through its high affinity receptor, RAGE and, possibly, TLR2 and TLR4.

Product Details

Verified Reactivity	Human, Mouse, Rat
Antibody Type	Monoclonal
Host Species	Mouse
Immunogen	Recombinant human HMGB1 with GST tag. A universal T cell epitope from a Mycobacterium tuberculosis antigen was introduced into the C-terminus of HMGB1 to increase the immunogenicity.
Formulation	This antibody is provided in 50% glycerol in aqueous buffered solutions with preservatives.
Preparation	The antibody was purified by affinity chromatography and conjugated with HRP under optimal conditions.
Concentration	Lot-specific (to obtain lot-specific concentration, please enter the lot number in our Concentration and Expiration Lookup or Certificate of Analysis online tools.)
Storage & Handling	Upon receipt, the antibody solution should be stored undiluted at -20°C, and protected from prolonged exposure to light.
Application	WB - *Quality tested*
Recommended Usage	Each lot of this antibody is quality control tested by Western blotting. For Western blotting, the suggested use of this reagent is 0.05 - 1.0 µg per ml (1:500 - 1:10000 dilution). It is recommended that the reagent be titrated for optimal performance for each application.
Application Notes	Clone 3E8 has been reported to protect mice from LPS induced sepsis[1]. Additional reported applications (for relevant formats) include: neutralization[1]. The LEAF™ or Ultra-LEAF™ purified antibody is recommended for functional assays (contact our custom solutions team).

Application References **(PubMed link indicates BioLegend citation)**	1. Zhou H, *et al.* 2009. *PLos One* 4:e6087. (Neut)
RRID	AB_2734518 (BioLegend Cat. No. 651411) AB_2734519 (BioLegend Cat. No. 651412)

Antigen Details

Structure	215 amino acids with predicted molecular weight of 25 kD.
Distribution	Nucleus
Function	DNA binding protein that associates with chromatin and has the ability to bend DNA. Binds single-stranded DNA preferentially. Involved in V(D)J recombination by acting as a cofactor of the RAG complex.
Interaction	Component of the RAG complex composed of core components RAG1 and RAG2.
Cell Type	B cells
Biology Area	Cell Biology, Immunology, Transcription Factors
Molecular Family	Nuclear Markers
Antigen References	1. Thomas JO and Travers AA. 2001. *Trends Biochem. Sci.* 26:167. 2. Müller S, *et al.* 2004. *J. Intern. Med.* 255:332. 3. Campana L, *et al.* 2008. *Curr. Opin. Immunol.* 20:518. 4. Klune JR, *et al.* 2008. *Mol. Med.* 14:476. 5. Dumitriu IE, *et al.* 2005. *Trends Immunol.* 26:381. 6. Bonaldi T, *et al.* 2003. *EMBO J.* 22:5551.
Gene ID	3146

Related Protocols

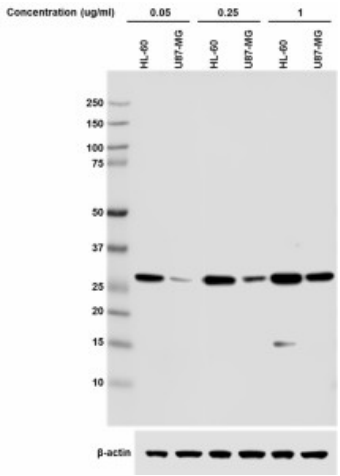
Direct-Blot™ HRP Antibodies Save You Time - Video

Western Blotting Protocol

Other Formats

Purified anti-HMGB1, PE anti-HMGB1, Alexa Fluor® 594 anti-HMGB1, Alexa Fluor® 488 anti-HMGB1, Alexa Fluor® 647 anti-HMGB1, Ultra-LEAF™ Purified anti-HMGB1, Direct-Blot™ HRP anti-HMGB1

Product Data



Western blot analysis of 15 µg cell lysates from HL-60 (High expressor) and U87-MG (Low expressor) cells. Samples were resolved by electrophoresis (4-12% Bis-Tris gel), transferred to nitrocellulose, and probed with 0.05, 0.25 and 1 µg/ml Direct-Blot™ HRP anti-HMGB1 antibody, clone 3E8. Direct-Blot™ HRP anti-β-actin antibody was used as a loading control (Cat. No. 643807, 1:8000 dilution).

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