

**HMGB1 (D3E5) Rabbit mAb (Biotinylated)**

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**For Research Use Only. Not for Use in Diagnostic Procedures.**

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H M R Mk	Endogenous	29	Rabbit IgG	#P09429	3146

**Product Usage Information****Application**

Western Blotting

**Dilution**

1:1000

**Storage**

Supplied in 140 mM NaCl, 3 mM KCl, 10 mM sodium phosphate (pH 7.4) dibasic, 2 mM potassium phosphate monobasic, 2 mg/mL BSA, and 50% glycerol. Store at -20°C. *Do not aliquot the antibody.*

**Specificity/Sensitivity**

HMGB1 (D3E5) Rabbit mAb (Biotinylated) recognizes endogenous levels of total HMGB1 protein. This antibody does not cross-react with other HMGB proteins, including HMGB2 and HMGB3.

**Species predicted to react based on 100% sequence homology**

Chicken, Bovine, Horse

**Source / Purification**

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Ala137 of human HMGB1 protein.

**Description**

This Cell Signaling Technology antibody is conjugated to biotin under optimal conditions. The biotinylated antibody is expected to exhibit the same species cross-reactivity as the unconjugated HMGB1 (D3E5) Rabbit mAb #6893.

**Background**

High mobility group protein B1 (HMGB1) belongs to a family of highly conserved proteins that contain HMG box domains (1,2). All three family members (HMGB1, HMGB2, and HMGB3) contain two HMG box domains and a C-terminal acidic domain. HMGB1 is a widely expressed and highly abundant protein (2). HMGB2 is widely expressed during embryonic development, but is restricted to lymphoid organs and testis in adult animals (3). HMGB3 is only expressed during embryogenesis (4). While expression varies, the biochemical properties of the different family members may be indistinguishable. The HMG box domains facilitate the binding of HMGB proteins to the minor groove of DNA, which results in local bending of the DNA double helix (1,2). HMGB proteins are recruited by and help facilitate the assembly of site-specific DNA binding proteins to their cognate binding sites in chromatin. For example, HMGB1 facilitates the binding of Hox proteins, Oct-1, p53, Rel proteins, and steroid hormone receptor proteins to their target gene promoters (1,2). In addition to their functions in the nucleus, HMGB proteins play a significant role in extracellular signaling associated with inflammation (5,6). HMGB1 is massively released into the extracellular environment during cell necrosis, but not apoptosis. Extracellular HMGB1 "alarms" the innate immune system by acting as a chemoattractant for inflammatory leukocytes, smooth muscle cells, and stem cells, functioning as an immune adjuvant for soluble and particulate antigens, and triggering activation of T cells and dendritic cells. 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. Hypoxia has also been shown to cause the release of HMGB1 in the liver, and some studies suggest a role for extracellular HMGB1 in tumor homeostasis (5,6).

**Background References**

1. Thomas, J.O. and Travers, A.A. (2001) *Trends Biochem Sci* 26, 167-74.
2. Müller, S. et al. (2004) *J Intern Med* 255, 332-43.
3. Ronfani, L. et al. (2001) *Development* 128, 1265-73.
4. Vaccari, T. et al. (1998) *Genomics* 49, 247-52.
5. Campana, L. et al. (2008) *Curr Opin Immunol* 20, 518-23.
6. Klune, J.R. et al. (2008) *Mol Med* 14, 476-84.

**Species Reactivity**

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

**Western Blot Buffer**

**IMPORTANT:** For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

## Applications Key

**W:** Western Blotting

## Cross-Reactivity Key

**H:** Human **M:** Mouse **R:** Rat **Mk:** Monkey

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