PRODUCT INFORMATION

HMGB1 (human, recombinant)

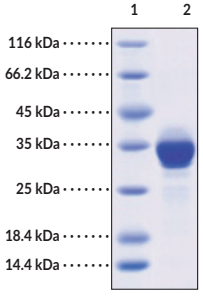
Item No. 43701

Overview and Properties

Synonyms:	Amphoterin, High-mobility Group Box 1 Protein, High Mobility Group Protein B1, HMG-1, SBP-1
Source:	Active recombinant human C-terminal His-tagged HMGB1 expressed in HEK293 cells
Amino Acids:	2-215 (full length)
Uniprot No.:	P09429
Molecular Weight:	26.21 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	≥95% estimated by SDS-PAGE
Supplied in:	Lyophilized from sterile PBS, pH 7.4
Endotoxin Testing:	<1.0 EU/µg, determined by the LAL endotoxin assay
Bioactivity:	See figures for details
Specific Activity:	Batch specific

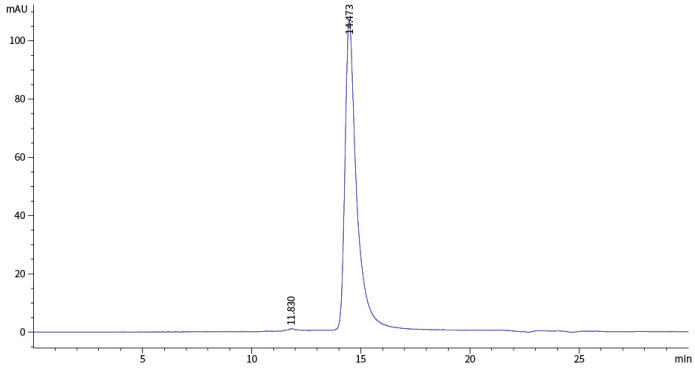
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

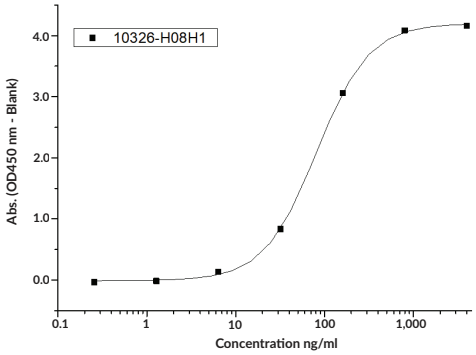
Images



Lane 1: MW Markers
Lane 2: HMGB1

SDS-PAGE Analysis of HMGB1. This protein has a calculated molecular weight of 26.21 kDa. It has an apparent molecular weight of approximately 33.2 kDa by SDS-PAGE under reducing conditions due to glycosylation.





Immobilized HMGB1 (human, recombinant) at 2 µg/ml (100 µl/well) can bind Recombinant Human AGER / RAGE Protein (Fc Tag), with an EC_{50} value of 40-120 ng/ml.

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Description

High mobility group protein B1 (HMGB1) is a member of the HMGB subfamily of proteins with roles in promoting proper DNA structure and mediating extracellular inflammation.[1,2] It is composed of two HMG box DNA-binding domains and a negatively charged C-terminus.[1,3] HMGB1 is ubiquitously expressed and found in the nucleus and extracellular space.[1] In the nucleus, it binds DNA and histones and ensures proper DNA structure.[3] HMGB1 is secreted by cells in response to regulated cell death pathways, tissue damage, ischemia, organ transplants, or pathogen infection, where it further increases local inflammation and stimulates additional HMGB1 secretion by immune cells.[1,2,4] Serum levels of HMGB1 are increased in patients with systemic inflammatory response syndrome (SIRS), a condition characterized by immune system hyperreactivity to infectious and non-infectious stimuli, and a SNP in the promoter region of *HMGB1* is associated with poor survival in SIRS patients.[5] Cayman's HMGB1 (human, recombinant) protein can be used in binding assays. This protein consists of 225 amino acids and has a calculated molecular weight of 26.21 kDa. By SDS-PAGE, under reducing conditions, the apparent molecular mass of the protein is approximately 33.2 kDa due to glycosylation.

References

1. Tang, D., Kang, R., Zeh, H.J., *et al.* The multifunctional protein HMGB1: 50 years of discovery. *Nat. Rev. Immunol.* **23(12)**, 824-841 (2023).
2. Yang, H. and Tracey, K.J. Targeting HMGB1 in inflammation. *Biochim. Biophys. Acta* **1799(1-2)**, 149-156 (2010).
3. Bianchi, M.E., Beltrame, M., and Paonessa, G. Specific recognition of cruciform DNA by nuclear protein HMG1. *Science* **243(4894 Pt 1)**, 1056-1059 (1989).
4. Ku, S.K., Lee, I.C., Kim, J.A., *et al.* Anti-septic effects of pellitorine in HMGB1-induced inflammatory responses *in vitro* and *in vivo*. *Inflammation* **37(2)**, 338-348 (2014).
5. Kornblit, B., Munthe-Fog, L., Madsen, H.O., *et al.* Association of HMGB1 polymorphisms with outcome in patients with systemic inflammatory response syndrome. *Crit. Care* **12(3)**, R83 (2008).

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