

DESCRIPTION

Source *E. coli*-derived human HMGB1/HMG-1 protein
Met1-Asp215, with a C-terminal 6-His tag
Accession # P09429.3

N-terminal Sequence Analysis Gly2

Predicted Molecular Mass 26 kDa

SPECIFICATIONS

SDS-PAGE 28-32 kDa, under reducing conditions.

Activity Measured by its binding ability in a functional ELISA.
Recombinant Human HMGB1/HMG-1 His-tag binds to Recombinant Human RAGE Fc Chimera Protein (Catalog # 1145-RG) with an ED₅₀ of 0.040-0.400 µg/mL.

Endotoxin Level <0.10 EU per 1 µg of the protein by the LAL method.

Purity >95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.

Formulation Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution Reconstitute at 200 µg/mL in water.

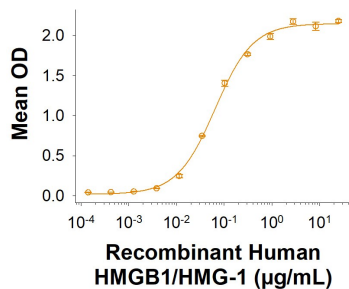
Shipping The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

Stability & Storage Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

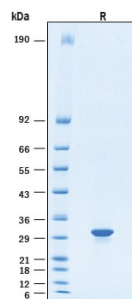
DATA

Binding Activity



Recombinant Human HMGB1/HMG-1 His-tag Protein Binding Activity. Measured by its binding ability in a functional ELISA. Recombinant Human HMGB1/HMG-1 His-tag Protein (Catalog # 11803-HM) binds to Recombinant Human RAGE Fc Chimera Protein (Catalog # 1145-RG) with an ED₅₀ of 0.040-0.400 µg/mL.

SDS-PAGE



Recombinant Human HMGB1/HMG-1 His-tag Protein SDS-PAGE. 2 µg/lane of Recombinant Human HMGB1/HMG-1 His-tag Protein (Catalog # 11803-HM) was resolved with SDS-PAGE under reducing (R) condition and visualized by Coomassie® Blue staining, showing bands at 28-32 kDa.

BACKGROUND

High-mobility Group Box 1 protein (HMGB1), also known as HMG1 or Amphoterin, is a member of the high mobility group box family of non-histone chromosomal proteins (1-3). Human HMGB1 is expressed as a 25 kDa single chain protein containing two globular positively charged DNA-binding domains (HMG boxes A and B) and a negatively charged C-terminal region that contains only Asp and Glu residues (4, 5). Posttranslational modification of HMGB1, including acetylation, phosphorylation, and methylation, affects HMGB1 localization, receptor interactions, and bioactivity (3). An intramolecular disulfide bond between Cys23 and Cys45 as well as the presence of the unpaired Cys106 thiol are critical for HMGB1-induced pro-inflammatory TNF-alpha secretion (2, 6). Alternatively, fully reduced HMGB1 acts as a potent chemoattractant for neutrophils and monocytes (7). HMGB1 can be localized to the nucleus or cytoplasm and can also be secreted despite its lack of a signal peptide (2). HMGB1 binds DNA in a non-sequence specific manner and may act as a structural cofactor during gene transcription (8). Acetylation of HMGB1 results in its cytoplasmic localization and eventual secretion (9). HMGB1 can be secreted by multiple cell types, and it is also released upon cell necrosis, apoptosis, and pyroptosis (2, 3). HMGB1 is widely recognized as a multifunctional alarmin that stimulates inflammation upon sterile or infectious insult. Receptors for HMGB1 include TLR2, TLR4, TLR9, Syndecan-3, Siglec-10, Integrin alpha M beta 2, CXCR4, TIM-3, and RAGE (1, 2). It is implicated in the pathogenesis of a broad range of diseases including atherosclerosis, sepsis, cancer, neurodegenerative diseases, and autoimmunity (3, 10-13).

References:

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