

## Animal-Free HMGB2/HMG-2 Protein, Human (His)

<b>Cat. No.:</b>	HY-P700088AF
<b>Synonyms:</b>	High Mobility Group Protein B2; High Mobility Group Protein 2; HMG-2; HMGB2; HMG2
<b>Species:</b>	Human
<b>Source:</b>	E. coli
<b>Accession:</b>	P26583 (M1-E209)
<b>Gene ID:</b>	3148
<b>Molecular Weight:</b>	Approximately 24.84 kDa

### PROPERTIES

<b>AA Sequence</b>	<p>M G K G D P N K P R      G K M S S Y A F F V      Q T C R E E H K K K      H P D S S V N F A E</p> <p>F S K K C S E R W K      T M S A K E K S K F      E D M A K S D K A R      Y D R E M K N Y V P</p> <p>P K G D K K G K K K      D P N A P K R P P S      A F F L F C S E H R      P K I K S E H P G L</p> <p>S I G D T A K K L G      E M W S E Q S A K D      K Q P Y E Q K A A K      L K E K Y E K D I A</p> <p>A Y R A K G K S E A      G K K G P G R P T G      S K K K N E P E D E      E E E E E E D E D</p> <p>E E E E D E D E E</p>
<b>Appearance</b>	Lyophilized powder.
<b>Formulation</b>	Lyophilized from a solution containing 1X PBS, pH 8.0.
<b>Endotoxin Level</b>	<0.1 EU per 1 µg of the protein by the LAL method.
<b>Reconstitution</b>	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH <sub>2</sub> O.
<b>Storage &amp; Stability</b>	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
<b>Shipping</b>	Room temperature in continental US; may vary elsewhere.

### DESCRIPTION

<b>Background</b>	<p>HMGB2/HMG-2, a versatile protein with diverse cellular functions across various compartments, may act in a redox-sensitive manner. In the nucleus, it serves as an abundant chromatin-associated non-histone protein, playing crucial roles in transcription, chromatin remodeling, and V(D)J recombination, among other processes. HMGB2/HMG-2 exhibits a DNA-binding preference for non-canonical DNA structures, such as single-stranded DNA, and possesses the ability to bend DNA, enhancing flexibility through looping. This looping mechanism facilitates the promotion of activities on various gene promoters by augmenting transcription factor binding and bringing distant regulatory sequences into close proximity. Involved in V(D)J recombination, HMGB2/HMG-2 acts as a cofactor of the RAG complex, stimulating cleavage and RAG</p>
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protein binding at the conserved recombination signal sequences. Additionally, it is proposed to participate in the innate immune response to nucleic acids by acting as a promiscuous immunogenic DNA/RNA sensor, cooperating with subsequent discriminative sensing by specific pattern recognition receptors. In the extracellular compartment, HMGB2/HMG-2 acts as a chemokine, promoting proliferation and migration of endothelial cells and exhibiting antimicrobial activity in gastrointestinal epithelial tissues. It is implicated in inflammatory responses to antigenic stimuli and involved in the modulation of neurogenesis, likely by regulating neural stem proliferation. Furthermore, HMGB2/HMG-2 contributes to articular cartilage surface maintenance through interactions with LEF1 and the Wnt/beta-catenin pathway. It interacts with various proteins, including POU2F2, POU2F1, POU3F1, SET, and LEF1, highlighting its intricate role in diverse cellular processes.

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**Caution: Product has not been fully validated for medical applications. For research use only.**

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