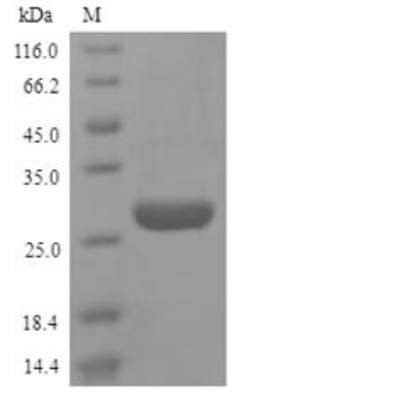
Recombinant Human High mobility group protein B1 (HMGB1), partial

Product Code	CSB-YP010553HU
Relevance	Multifunctional redox sensitive protein with various roles in different cellular compartments. In the nucleus is one of the major chromatin-associated non-histone proteins and acts as a DNA chaperone involved in replication, transcription, chromatin remodeling, V(D)J recombination, DNA repair and genome stability. Proposed to be an universal biosensor for nucleic acids. Promotes host inflammatory response to sterile and infectious signals and is involved in the coordination and integration of innate and adaptive immune responses. In the cytoplasm functions as sensor and/or chaperone for immunogenic nucleic acids implicating the activation of TLR9-mediated immune responses, and mediates autophagy. Acts as danger associated molecular pattern (DAMP) molecule that amplifies immune responses during tissue injury. Released to the Extracellular domain environment can bind DNA, nucleosomes, IL-1 beta, CXCL12, AGER isoform 2/sRAGE, lipopolysaccharide (LPS) and lipoteichoic acid (LTA), and activates cells through engagement of multiple surface receptors. In the Extracellular domain compartment fully reduced HMGB1 (released by necrosis) acts as a chemokine, disulfide HMGB1 (actively secreted) as a cytokine, and sulfonyl HMGB1 (released from apoptotic cells) promotes immunological tolerance (PubMed:23519706, PubMed:23446148, PubMed:23994764, PubMed:25048472). Has proangiogdenic activity (By similarity). May be involved in platelet activation (By similarity). Binds to phosphatidylserine and phosphatidylethanolamide (By similarity). Bound to RAGE mediates signaling for neuronal outgrowth (By similarity). May play a role in accumulation of expanded polyglutamine (polyQ) proteins such as huntingtin (HTT) or TBP (PubMed:23303669, PubMed:25549101).
Abbreviation	Recombinant Human Hmgb1 protein, partial
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	P09429
Product Type	Recombinant Proteins
Immunogen Species	Homo sapiens (Human)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	GKGDPKKPRGKMSSYAFFVQTCREEHKKKHPDASVNFSEFSKKCSERWKTM SAKEKGKFEDMAKADKARYEREMKTYIPPKGETKKKFKDPNAPKRPPSAFFLF CSEYRPKIKGEHPGLSIGDVAKKLGEMWNNTAADDKQPYEKKAAKLKEKYEK DIAAYRAKGKPDAAKKGVVKAEKSKKKKEEEEDEEDEEDEEEEEDEEDEDEE EDDDDE
Research Area	Epigenetics and Nuclear Signaling

Source	Yeast
Target Names	HMGB1
Protein Names	Recommended name: High mobility group protein B1Alternative name(s): High mobility group protein 1 Short name= HMG-1
Expression Region	2-215aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-tagged
Mol. Weight	26.8kDa
Protein Length	Partial

Image



(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

Description

The recombinant Human HMGB1 is a yeast-expressed (2-215aa) protein with N-terminal 6xHis tag. The purity is 90%+ measured by SDS-PAGE. The highly developed genetic system, ease of use, reduced time input, and costs have made Pichia Pastoris an attractive organism for the expression and production of recombinant proteins. So we choose the Yeast system to express this recombinant HMGB1 protein, which is able to carry specifically designed plasmids, and the plasmid used consists of restriction sites that can be used to insert the gene sequence of interest. Transformation of yeasts with the plasmid produces the desired protein and can be appropriately scaled up.

HMGB1 is a highly conserved non-histone nuclear protein widely expressed in mammalian cells. In the nucleus, HMGB1 attaches to the DNA to regulate the chromosome structure and maintain the transcription, replication, DNA repair, and nucleosome assembly. Extracellular HMGB1 as an alarmin can elicit proinflammatory responses, impair macrophage phagocytosis and efferocytosis, and alter vascular remodeling. HMGB1 is involved in various inflammatory responses and autoimmunity, especially lung-related diseases.

Shelf Life	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself.

Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.