Data Sheet (Cat.No.TMPY-03427)

TargetMol

HMGB1 Protein, Human, Recombinant (aa 57-158, His)

General Information

Synonyms: SBP-1;HMG3;high mobility group box 1;HMG1;HMG-1

Protein Construction: A DNA sequence encoding the mature form of human HMGB1 (P09429) (Lys57-Asp158) was expressed with a polyhistidine tag at the N-terminus. Predicted N terminal: His

Species: Human

Expression Host: E. coli

Accession: P09429

Molecular Weight: 13.6 kDa (predicted); 15 kDa (reducing conditions)

QC Testing

Biological Activity: Immobilized human His-HMGB1 at 10 μg/ml (100 μl/well) can bind AGER-Fc with a linear range of 0.31-2.5 μg/ml.

Purity: > 90 % as determined by SDS-PAGE

Endotoxin: Please contact us for more information.

Formulation: Supplied as sterile PBS, 20% Glycerol, pH 7.4.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store the product under sterile conditions at -20°C to -80°C. Samples are stable for up to 12 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

Proteins are shipped with blue ice.

Protein Background

High-mobility group box 1 protein (HMGB1), also known as HMG-1 or amphoterin previously, is a member of the HMGB family consisting of three members, HMGB1, HMGB2, and HMGB3. HMGB1 is a DNA-binding nuclear protein, released actively following cytokine stimulation as well as passively during cell death. It is the prototypic damage-associated molecular pattern (DAMP) molecule and has been implicated in several inflammatory disorders. HMGB1 signals via the receptor for advanced glycation end-product (RAGE) and members of the toll-like receptor (TLR) family. The most prominent HMGB1 protein and mRNA expression arthritis are present in pannus regions, where synovial tissue invades articular cartilage and bone. HMGB1 promotes the activity of proteolytic enzymes, and osteoclasts need HMGB1 for functional maturation. As a non-histone nuclear protein, HMGB1 has a dual

function. Inside the cell, HMGB1 binds DNA, regulating transcription, and determining chromosomal architecture. Outside the cell, HMGB1 can serve as an alarmin to activate the innate system and mediate a wide range of physiological and pathological responses. Extracellular HMGB1 represents an optimal " necrotic marker" selected by the innate immune system to recognize tissue damage and initiate reparative responses. However, extracellular HMGB1 also acts as a potent pro-inflammatory cytokine that contributes to the pathogenesis of diverse inflammatory and infectious disorders. HMGB1 has been successfully therapeutically targeted in multiple preclinical models of infectious and sterile diseases including arthritis. As shown in studies on patients as well as animal models, HMGB1 can play an important role in the pathogenesis of the rheumatic disease, including rheumatoid arthritis, systemic lupus erythematosus, and polymyositis among others. Besides, enhanced postmyocardial infarction remodeling in type 1 diabetes mellitus was partially mediated by HMGB1 activation.

Reference

Ulloa L,et al.(2006) High-mobility group box 1 (HMGB1) protein: friend and foe. Cytokine Growth Factor Rev. 17 (3): 189-201.

Pisetsky DS,et al.(2008) High-mobility group box protein 1 (HMGB1): an alarmin mediating the pathogenesis of rheumatic disease. Arthritis Res Ther. 10 (3): 209.

Volz HC,et al.(2010) The role of HMGB1/RAGE in inflammatory cardiomyopathy. Semin Thromb Hemost. 36(2): 185-94.

Sims GP,et al.(2010) HMGB1 and RAGE in inflammation and cancer. Annu Rev Immunol. 28: 367-88.

Andersson U,et al.(2010) The role of HMGB1 in the pathogenesis of rheumatic disease. Biochim Biophys Acta. 1799 (1-2): 141-8.

Tel:781-999-4286 E_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481