

HMG1

(Native, High Mobility Group 1)

Bovine, calf thymus

Cat. No.	Amount
PR-757	10 µg

Liquid. Supplied in 20 mM Tris-HCl, pH 7.9, 100 mM KCl, 0.2 mM EDTA, 1 mM DTT, 20% glycerol.

High Mobility Group 1 (HMG1) is a 26 kDa highly conserved non-sequence-specific DNA-binding nuclear protein. Mammalian HMG1 has two homologous DNA-binding domains (HMG boxes A and B, each of 80-90 amino-acid residues), linked by a short basic region to an acidic C-terminal domain containing 30 consecutive Asp and Glu residues. HMG1 has been implicated in a number of fundamental biological processes including transcription, replication, and recombination, in which it plays a role in manipulating DNA structure by bending, looping, compaction, or unwinding, or by directly contacting with distinct cellular proteins. HMG1 can act as a repressor, by interacting with TBP to block preinitiation complex formation or as an activator, by facilitating the binding of various transcription factors to their cognate DNA sequences. Most recently, it was discovered that HMG1 is a late mediator of delayed endotoxin lethality by activating downstream cytokine release.

HMG1 was purified from calf thymus using several steps of conventional and FPLC chromatography.

HMG1 has been applied in *in vitro* transcription assays, DNA-protein and protein-protein interaction assays.

The purified calf thymus HMG1 protein is greater than 95% homogeneous and contains no detectable protease, DNase, and RNase activity.

Unit definition:

1 unit equals 1 nanogram of purified protein. 10-100 units are required for a gel mobility shift assay in a 20 µl reaction to super-shift TBP-DNA complex, 50-500 units are required for reconstituted transcription assay and 100 units are sufficient for a protein-protein interaction assay.

AVOID FREEZE/THAW CYCLES.

For *in vitro* use only!

Purity: > 95% by SDS-PAGE.

Store: -80 °C

Selected References:

Bianchi *et al.* (1989) Specific recognition of cruciform DNA by nuclear protein HMG1. *Science* **243**:1056.

Bustin *et al.* (1990) Structural features of the HMG chromosomal proteins and their genes. *Biochim. Biophys. Acta* **1049**:231.

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Zlatanova *et al.* (1998) Binding to four-way junction DNA: a common property of architectural proteins? *FASEB J.* **12**:421.

Stelzer *et al.* (1994) Repression of basal transcription by HMG2 is counteracted by TFIIH-associated factors in an ATP-dependent process. *Mol. Cell. Biol.* **14**:4712.

Lu *et al.* (2000) Influence of HMG-1 and adenovirus oncoprotein E1A on early stages of transcriptional preinitiation complex assembly. *J. Biol. Chem.* **275**(45):35006.

Jayaraman *et al.* (1998) *Genes Dev.* **12**:462.

Omate *et al.* (1994) The DNA-bending protein HMG-1 enhances progesterone receptor binding to its target DNA sequences. *Mol. Cell. Biol.* **14**:3376.