



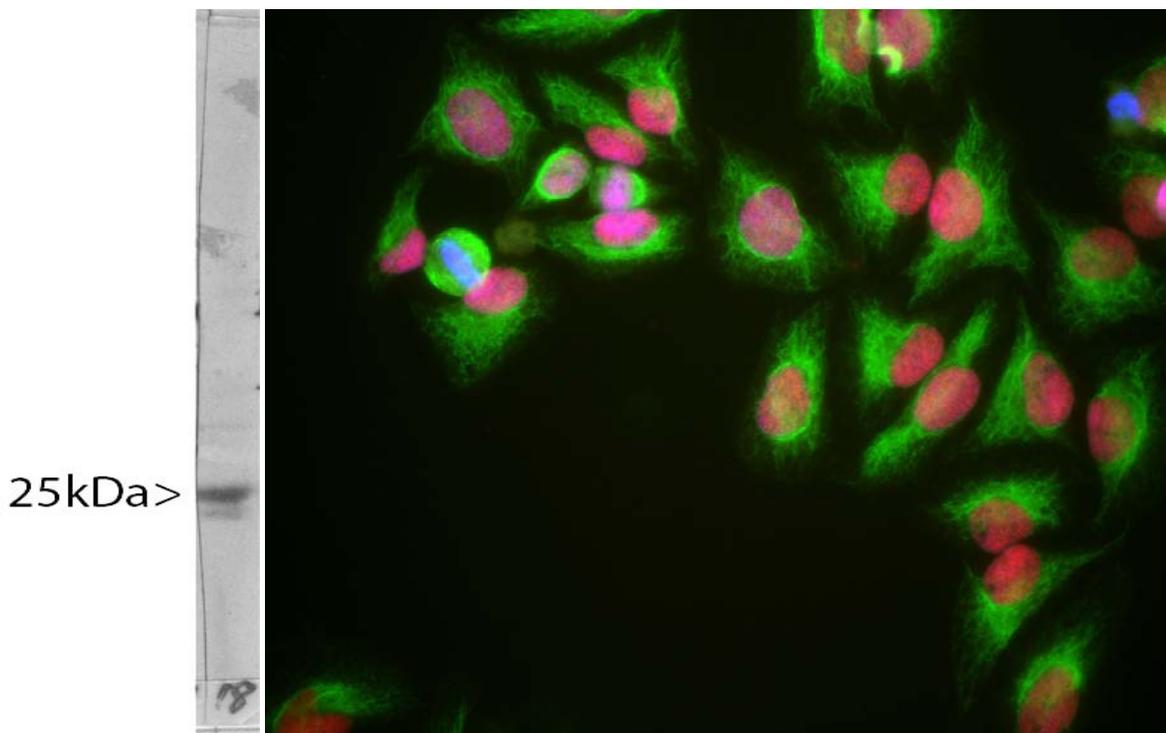
4949 SW 41st Blvd.
Suites 40 & 50
Gainesville, FL 32608
Tel: (352) 372 7022
Fax: (352) 372 7066
admin@encorbio.com

Catalogue# MCA-1F3: Mouse Monoclonal Antibody to High-mobility group protein B1 (a.k.a. High mobility group box 1, Amphoterin): HMGB1

The Immunogen: High-mobility group proteins were named originally since they are abundant relatively low molecular weight proteins which run quickly on SDS-PAGE gels. High-mobility group proteins box 1 (HMGB1) is one of these. The "box" in the name refers to the so-called high mobility group (HMG) box, a compact domain involved in DNA binding and protein-protein interactions. The HMGB1 molecule has two of these HMG domains.

The protein is also called amphoterin, this name being derived from the presence of two highly charged regions in the molecule, a relatively neutrally charged N-terminus and a very negatively charged C-terminus. In fact, the molecule is very unusually charged throughout, the human sequence consisting of 16.7% Glutamic acid, 9.3% Aspartic acid, 20% Lysine and 9.3% Arginine.

HMGB1 can bind Toll like receptor 4 (TLR4) and the Receptor for Advanced Glycation End products (RAGE). TLRs are components of the [innate immune system](#), first recognized as a family of receptors which recognize "Pathogen Associated Molecular Pattern molecules (PAMPs)". PAMPs are common components of bacteria and when TLRs bind these, a strong inflammatory response is activated. More recently it has been recognized that TLRs can also be activated by Damage Associated Molecular Pattern molecules (DAMPs), which are endogenous substances released from damaged and diseased cells which also bind to TLR family receptors and also activate inflammation. HMGB1 is such a DAMP, binding to TLR4, and much evidence suggests that HMGB1 is a strong activator of inflammation. Interestingly, HMGB1 is released by necrotic cells but not by apoptotic cells (1). The [HGNC](#) name for this protein is [HBGB1](#).



Left: Blot of crude HeLa cell extract stained with MCS-1F3. HMGB1 runs at an apparent molecular weight of 25kDa. **Right:** HeLa cells grown in tissue culture and stained with MCA-1F3 (red), EnCor's chicken polyclonal antibody to Vimentin [CPCA-VIM](#) (green) and DNA (blue). The MCA-1F3 antibody reveals strong nuclear staining which overlaps with the DNA stain.

Antibody characteristics: MCA-1F3 is a mouse IgG2b class antibody. MCA-1F3 is known to react with HMGB1 from human, cow, pig, mouse, rat and other mammals. Since HMGB1 is highly conserved, it is likely that the antibody is effective on other species also.

Suggestions for use: The antibody solution is affinity purified from tissue culture supernatant and is at a concentration of 1 mg/mL in 500 µL of phosphate buffered saline. The antibody solution can be used at dilutions of 1:1,000 or higher in immunofluorescence experiments. In western blotting using chemiluminescence it can be used at dilutions of 1:1,000-2,000. Antibody preparation contains 10 mM sodium azide preservative (Link to <http://www.encorbio.com/MSDS/azide.htm> for Material Safety Data Sheet). Avoid repeated freezing and thawing, store at 4°C or -20°C.

UniProt Link: <http://www.uniprot.org/uniprot/Q6P202>

Limitations: This product is for research use only and is not approved for use in humans or in clinical diagnosis.

References:

1. Scaffidi P, Misteli T, Bianchi ME. Release of chromatin protein HMGB1 by necrotic cells triggers inflammation. [Nature 418:191-5 \(2002\)](#).

Availability and Price: Available for shipping now, \$200 US per aliquot of 100 µLs of purified antibody at a concentration of 1 mg/mL, enough for hundreds of experiments.

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