

# PRODUCT INFORMATION



**MBD2 (human recombinant; methyl binding domain aa 150-220)**  
Item No. 11286

## Overview and Properties

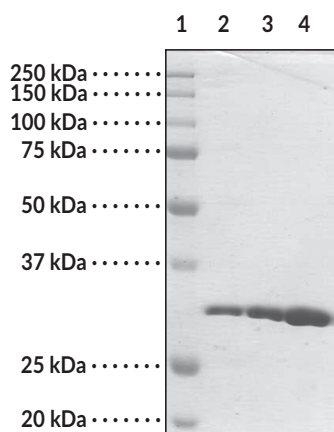
**Synonyms:** Methyl-CpG Binding Domain Protein 2, Methyl Cytosine Binding Domain Protein 2  
**Source:** Recombinant N-terminal GST-tagged protein expressed in *E. coli*  
**Amino Acids:** 150-220 (partial protein)  
**Uniprot No.:** Q9UBB5  
**Molecular Weight:** 34.8 kDa  
**Storage:** -80°C (as supplied)  
**Stability:** ≥1 year  
**Purity:** ≥95% estimated by SDS-PAGE  
**Supplied in:** 50 mM Tris, pH 7.5, with 500 mM sodium chloride, 5% glycerol, and 5 mM β-mercaptoethanol

### Protein

**Concentration:** *batch specific* mg/ml

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

## Image



Lane 1: MW Markers  
Lane 2: MBD2 (1 µg)  
Lane 3: MBD2 (2 µg)  
Lane 4: MBD2 (4 µg)

**WARNING**  
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

**SAFETY DATA**  
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

**WARRANTY AND LIMITATION OF REMEDY**  
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 01/03/2022

**CAYMAN CHEMICAL**  
1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA  
PHONE: [800] 364-9897  
[734] 971-3335  
FAX: [734] 971-3640  
CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM

# PRODUCT INFORMATION



## Description

---

DNA methylation occurs mainly at the 5'-position of cytosine rings (5-methylcytosine (5mC)). The 5mC bases are found largely in genomic regions with a high frequency of cytosines and guanines, called CpG islands. Methyl-CpG binding domain 2 (MBD2) protein specifically binds to methylated promoters on CpG islands. The MBD protein family consists of five members: MeCP2, MBD1, MBD2, MBD3, and MBD4.<sup>1-3</sup> The sequence similarity between the MBD proteins is limited to the MBD domains.<sup>4</sup> MBD2 binding to 5mC facilitates the recruitment of chromatin remodeling and transcriptional repressor complexes, which results in a repressive chromatin state.<sup>4,5</sup> MBD2 has been implicated in breast cancer progression. Silencing of MBD2 protein expression was found to be sufficient to initiate and maintain tumor suppressor gene transcription.<sup>6</sup>

## References

---

1. Fatemi, M. and Wade, P.A. MBD family proteins: Reading the epigenetic code. *J. Cell Sci.* **119**(Pt. 15), 3033-3037 (2006).
2. Dhasarathy, A. and Wade, P.A. The MBD protein family-reading an epigenetic mark? *Mutat. Res.* **647**(1-2), 39-43 (2008).
3. Hendrich, B. and Bird, A. Identification and characterization of a family of mammalian methyl-CpG binding proteins. *Mol. Cell. Biol.* **18**(11), 6538-6547 (1998).
4. Berger, J. and Bird, A. Role of MBD2 in gene regulation and tumorigenesis. *Biochem. Soc. Trans.* **33**(Pt. 6), 1537-1540 (2005).
5. Ng, H.H., Zhang, Y., Hendrich, B., *et al.* MBD2 is a transcriptional repressor belonging to the MeCP1 histone deacetylase complex. *Nat. Genet.* **23**(1), 58-61 (1999).
6. Mian, O.Y., Wang, S.Z., Zhu, S.Z., *et al.* Methyl binding domain protein 2 (MBD2) dependent proliferation and survival of breast cancer cells. *Mol. Cancer Res.* **9**(8), 1152-1162 (2011).

CAYMAN CHEMICAL  
1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA  
PHONE: [800] 364-9897  
[734] 971-3335  
FAX: [734] 971-3640  
CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM