

# PRODUCT INFORMATION



## Citrullinated Myelin Basic Protein (R130) Monoclonal Antibody (Clone 3C6) Item No. 33911

### Overview and Properties

<b>Contents:</b>	This vial contains 25 µg of protein G affinity-purified monoclonal antibody.
<b>Synonyms:</b>	citMBP R130, Citrullinated Myelin A1 Protein, Citrullinated Myelin Membrane Encephalitogenic Protein
<b>Immunogen:</b>	Peptide from the C-terminal region of human myelin basic protein with citrulline at R130
<b>Cross Reactivity:</b>	(+) Citrullinated myelin basic protein (R130)
<b>Species Reactivity:</b>	(+) Human, mouse
<b>Form:</b>	Liquid
<b>Storage:</b>	4°C (as supplied)
<b>Stability:</b>	≥1 year
<b>Storage Buffer:</b>	0.1 M Tris-glycine, pH 7.4, with 150 mM sodium chloride and 0.05% sodium azide
<b>Clone:</b>	3C6
<b>Host:</b>	Mouse
<b>Isotype:</b>	IgG1
<b>Applications:</b>	ELISA, Immunohistochemistry (IHC), and Western blot (WB); The optimal working concentration/dilution should be determined empirically.

### Description

Citrullinated myelin basic protein (citMBP) is a citrullinated form of MBP, a protein that is integral to myelin stability in the CNS.<sup>1</sup> MBP contains 19 arginine residues, including the arginine residue at position 130 (R130) in human MBP, which corresponds to R128 in the mouse protein, that can be citrullinated by peptidylarginine deiminases (PADs), decreasing the positive charge of MBP.<sup>1-3</sup> The loss of positive charge disrupts MBP-lipid interactions, leading to myelin destabilization and loss and increases its susceptibility for degradation. MBP is degraded by the myelin-associated protease cathepsin D, which leads to exposure and release of immunodominant epitopes.<sup>1,4</sup> The percentage of MBP that is citrullinated is increased in the postmortem brain from patients with multiple sclerosis (MS), with an even greater percentage citrullinated in Marburg disease, a more severe form of MS.<sup>1</sup> citMBP isolated from patients with multiple sclerosis (MS) is degraded by cathepsin D at a higher rate than MBP isolated from healthy controls.<sup>1,4</sup> Cayman's Citrullinated Myelin Basic Protein (R130) Monoclonal Antibody (Clone 3C6) can be used for ELISA, immunohistochemistry (IHC), and Western blot (WB) applications.

### References

1. Yang, L., Tan, D., and Piao, H. Myelin basic protein citrullination in multiple sclerosis: A potential therapeutic target for the pathology. *Neurochem. Res.* **41(8)**, 1845-1856 (2016).
2. Jang, B., Jeon, Y.-C., Shin, H.-Y., *et al.* Myelin basic protein citrullination, a hallmark of central nervous system demyelination, assessed by novel monoclonal antibodies in prion diseases. *Mol. Neurobiol.* **55(4)**, 3172-3184 (2018).
3. Mastronardi, F.G. and Moscarello, M.A. Molecules affecting myelin stability: A novel hypothesis regarding the pathogenesis of multiple sclerosis. *J. Neurosci. Res.* **80(3)**, 301-308 (2005).
4. Cao, L., Goodin, R., Wood, D., *et al.* Rapid release and unusual stability of immunodominant peptide 45-89 from citrullinated myelin basic protein. *Biochemistry* **38(19)**, 6157-6163 (1999).

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.

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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