

# PRODUCT INFORMATION



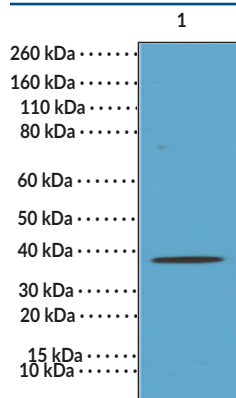
## p38 $\alpha$ MAPK Rabbit Monoclonal Antibody (Clone RM245)

Item No. 32199

### Overview and Properties

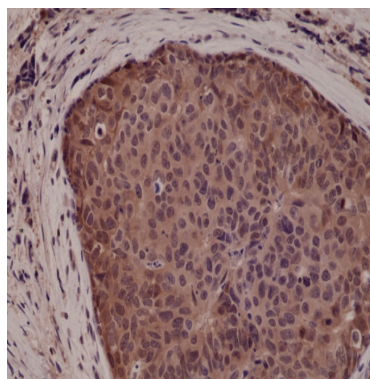
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|----------------------------|---|
| <b>Contents:</b>           | This vial contains 100 $\mu$ l of protein A-affinity purified monoclonal antibody.  |
| <b>Synonyms:</b>           | MAPK14, Mitogen-activated Protein Kinase 14, Mitogen-activated Protein Kinase p38 $\alpha$ , Stress-activated Protein Kinase 2A   |
| <b>Immunogen:</b>          | Peptide corresponding to p38 $\alpha$ MAPK (aa 300-360)   |
| <b>Species Reactivity:</b> | (+) Human   |
| <b>Form:</b>               | Liquid  |
| <b>Storage:</b>            | -20°C (as supplied)   |
| <b>Stability:</b>          | $\geq$ 1 year   |
| <b>Storage Buffer:</b>     | PBS with 50% glycerol, 1% BSA, and 0.09% sodium azide   |
| <b>Clone:</b>              | RM245   |
| <b>Host:</b>               | Rabbit  |
| <b>Isotype:</b>            | IgG   |
| <b>Applications:</b>       | Immunohistochemistry (IHC) and Western blot (WB); the recommended starting dilution is 1:1,000-1:5,000 for IHC and 1:1,000-1:2,000 for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically. |

### Images



Lane 1: HeLa cell lysate

WB of HeLa cell lysate using p38 $\alpha$  MAPK Rabbit Monoclonal Antibody (Clone RM245) at a dilution of 1:1,000.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human breast cancer tissue using p38 $\alpha$  MAPK Rabbit Monoclonal Antibody (Clone RM245) at a 1:5,000 dilution.

**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**  
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## Description

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p38 MAPK is a serine/threonine protein kinase and member of the MAPK family with roles in the regulation of immune responses and embryonic development, as well as cell differentiation, metabolism, and survival.<sup>1,2</sup> It exists as 4 isoforms, p38 $\alpha$ , - $\beta$ , - $\gamma$ , and - $\delta$ , encoded by *MAPK14*, *MAPK11*, *MAPK12*, and *MAPK13*, respectively, in humans. p38 $\alpha$  MAPK is ubiquitously expressed, with the highest levels of expression in heart, skeletal muscle, and brain.<sup>1,3</sup> It is activated *via* dual phosphorylation of threonine 180 and tyrosine 182 by the MAP2K kinases MKK3 and MKK6 in response to LPS or the production of inflammatory cytokines.<sup>1,2</sup> Downstream signaling targets of p38 $\alpha$  MAPK include protein kinases, transcription factors, and transcriptional regulators, among others.<sup>2</sup> Knockdown of *Mapk14* is embryonic lethal, while macrophage-specific deletion of *Mapk14* inhibits inflammatory cytokine production and is protective against cecal ligation and puncture-induced sepsis in mice.<sup>2,3</sup> *Mapk14* knockdown also increases lysosomal degradation of  $\beta$ -secretase 1 (BACE1) and decreases amyloid- $\beta$  (A $\beta$ ) production in the APP/PS1 double transgenic mouse model of Alzheimer's disease.<sup>4</sup> Cayman's p38 $\alpha$  MAPK Rabbit Monoclonal Antibody (Clone RM245) can be used for immunohistochemistry (IHC) and Western blot (WB) applications. The antibody recognizes p38 $\alpha$  MAPK at approximately 38 kDa from human samples.

## References

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1. Lee, J.K. and Kim, N.-J. Recent advances in the inhibition of p38 MAPK as a potential strategy for the treatment of Alzheimer's disease. *Molecules* **22(8)**, 1287 (2017).
2. Han, J., Wu, J., and Silke, J. An overview of mammalian p38 mitogen-activated protein kinases, central regulators of cell stress and receptor signaling. *F1000Res.* **9**, 653 (2020).
3. Bachstetter, A.D. and Van Eldik, L.J. The p38 MAP kinase family as regulators of proinflammatory cytokine production in degenerative diseases of the CNS. *Aging Dis.* **1(3)**, 199-211 (2010).
4. Schnöder, L., Hao, W., Qin, Y., *et al.* Deficiency of neuronal p38 $\alpha$  MAPK attenuates amyloid pathology in Alzheimer disease mouse and cell models through facilitating lysosomal degradation of BACE1. *J. Biol. Chem.* **291(5)**, 2067-2079 (2016).

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