

PRODUCT INFORMATION

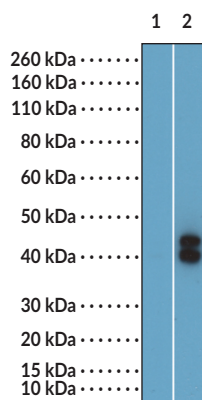


ERK1/2 (Phospho-Thr²⁰²/Tyr²⁰⁴) Rabbit Monoclonal Antibody (Clone RM451) Item No. 35902

Overview and Properties

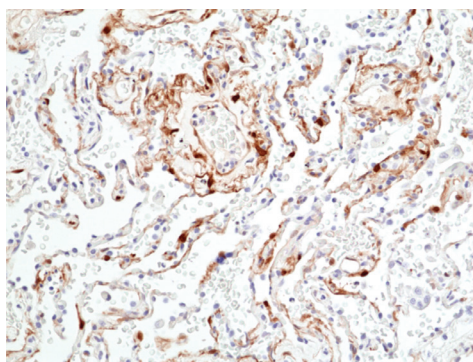
Contents:	This vial contains 100 µl of protein A-affinity purified monoclonal antibody.
Synonyms:	p44/p42 MAPK, MAPK3/MAPK1
Immunogen:	Peptide corresponding to human ERK1/2 (phospho-Thr ²⁰² /Tyr ²⁰⁴)
Cross Reactivity:	(+) ERK1/2 (phospho-Thr ²⁰² /Tyr ²⁰⁴); (-) ERK1/2 without phosphorylation at Thr ²⁰² /Tyr ²⁰⁴
Species Reactivity:	(+) Human
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥1 year
Storage Buffer:	PBS, with 50% glycerol, 1% BSA, and 0.09% sodium azide
Clone:	RM451
Host:	Rabbit
Isotype:	IgG
Applications:	Immunohistochemistry (IHC) and Western blot (WB); the recommended starting dilution is 1:100-1:200 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: A431 cell lysates untreated
Lane 2: A431 cell lysates treated

WB of A431 cell lysates untreated or treated with EGF using ERK1/2 (Phospho-Thr²⁰²/Tyr²⁰⁴) Rabbit Monoclonal Antibody (Clone RM451) at a dilution



Immunohistochemical staining of formalin-fixed and paraffin-embedded human lung tissue using ERK1/2 (Phospho-Thr²⁰²/Tyr²⁰⁴) Rabbit Monoclonal Antibody (Clone RM451) at a dilution of 1:200.

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, 01/30/2024

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

ERK1 and ERK2, also known as ERK1/2, are serine/threonine protein kinases and essential components of the MAP kinase signaling cascade.¹ They share 84% sequence homology and are each composed of a glycine-rich loop, hinge region, and protein kinase domain containing a catalytic HRD motif, activation segment, and kinase insert domain. ERK1/2 are ubiquitously expressed though ERK2 is expressed at higher levels than ERK1 and is predominant in the brain and hematopoietic cells.^{2,3} Both isoforms localize to the cytosol anchored to MEK1/2.¹ Upon extracellular stimulation with mitogens, growth factors, or cytokines, the MAP kinase signaling cascade is initiated and terminates with dual phosphorylation of ERK1 and ERK2 in the activation segment's activation lip at Thr²⁰²/Tyr²⁰⁴ or Thr¹⁸⁵/Tyr¹⁸⁷, respectively, by MEK1/2.^{1,4-6} Upon activation, ERK1/2 phosphorylate and activate substrates in the cytosol or various subcellular compartments, including the nucleus where they induce activation of transcription factors involved in cell proliferation, differentiation, and the stress response.^{4,5,7,8} Misregulation of the MAP kinase cascade drives development of various cancers.^{4,5} Cayman's ERK1/2 (Phospho-Thr²⁰²/Tyr²⁰⁴) Rabbit Monoclonal Antibody (Clone RM451) can be used for immunohistochemistry (IHC) and Western blot (WB) applications.

References

1. Roskoski, R., Jr. ERK1/2 MAP kinases: Structure, function, and regulation. *Pharm. Res.* **66(2)**, 105-143 (2012).
2. Buscá, R., Pouysségur, J., and Lenormand, P. ERK1 and ERK2 map kinases: Specific roles or functional redundancy? *Front. Cell Dev. Biol.* **4**, 53 (2016).
3. Vantaggiato, C., Formentini, I., Bondanza, A., et al. ERK1 and ERK2 mitogen-activated protein kinases affect Ras-dependent cell signaling differentially. *J. Biol.* **5(5)**, 14 (2006).
4. Santarpia, L., Lippman, S.L., and El-Naggar, A.K. Targeting the mitogen-activated protein kinase RAS-RAF signaling pathway in cancer therapy. *Expert. Opin. Ther. Targets* **16(1)**, 103-119 (2012).
5. Guo, Y.-J., Pan, W.-W., Liu, S.-B., et al. ERK/MAPK signalling pathway and tumorigenesis. *Exp. Ther. Med.* **19(3)**, 1997-2007 (2020).
6. Buscá, R., Pouysségur, J., and Lenormand, P. ERK1 and ERK2. *Encyclopedia of signaling molecules*. Choi, S., editor, 2nd edition, Springer (2018).
7. Lenormand, P., Brondello, J.-M., Brunet, A., et al. Growth factor-induced p42/p44 MAPK nuclear translocation and retention requires both MAPK activation and neosynthesis of nuclear anchoring proteins. *J. Cell Biol.* **142(3)**, 625-633 (1998).
8. Brunet, A., Roux, D., Lenormand, P., et al. Nuclear translocation of p42/p44 mitogen-activated protein kinase is required for growth factor-induced gene expression and cell cycle entry. *EMBO J.* **18(3)**, 664-674 (1999).

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