

MAPK15 (ERK8) (human; full length), pAb

Alternate Names: Mitogen Activated Protein kinase 15, ERK8

Cat. No. 68-0040-100
Lot. No. 30279

Quantity: 100 µg
Storage: -20°C

FOR RESEARCH USE ONLY

NOT FOR USE IN HUMANS

CERTIFICATE OF ANALYSIS

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This antibody was developed and validated by the Medical Research Council Protein Phosphorylation and Ubiquitylation Unit (University of Dundee, Dundee, UK).

Background

Protein ubiquitylation and protein phosphorylation are the two major mechanisms that regulate the functions of proteins in eukaryotic cells. However, these different posttranslational modifications do not operate independently of one another, but are frequently interlinked to enable biological processes to be controlled in a more complex and sophisticated manner. Studying how protein phosphorylation events control the ubiquitin system and how ubiquitylation regulates protein phosphorylation has become a focal point of the study of cell regulation and human disease. MAP kinases are serine, threonine, and tyrosine specific protein kinases that regulate proliferation, gene expression, differentiation, mitosis, cell survival, and apoptosis in response to stimuli, such as mitogens, osmotic stress, heat shock and pro-inflammatory cytokines. Cloning of human Mitogen Activated Protein kinase 15 (MAPK15 or ERK8) was first described by Abe *et al.* (2002). A recent study into autophagy has revealed that MAPK15 can be localized to autophagic compartments increasing, in a kinase-dependent fashion, the lipidation of ATG8-like (Autophagy-related protein 8-like) proteins such as GABARAP (GABA(A) receptor-associated protein), as well as increasing autophagosome formation and SQSTM1 (Sequestosome 1) degradation, while de-

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Physical Characteristics

Quantity: 100 µg

Concentration: to be provided on shipping

Source: sheep polyclonal antibody

Immunogen: human MAPK15 (residues 1-544) [6His-tagged]

Purification: affinity-purified using immobilized immunogen

Formulation: phosphate-buffered saline

Specificity: detects MAPK15 at ~63 kDa

Reactivity: human

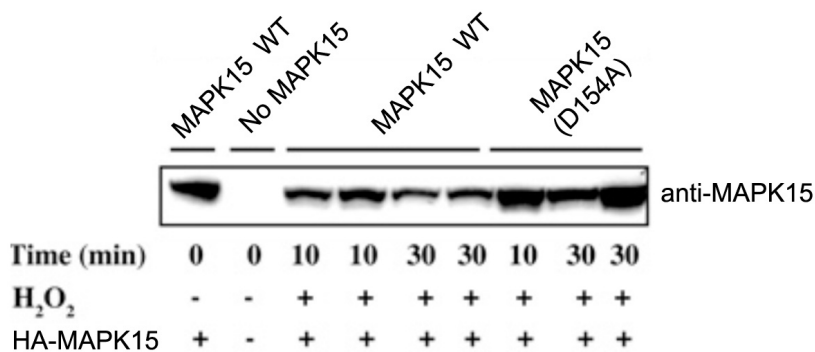
Species cross reactivity: mouse

Stability/Storage: 12 months at -20°C; aliquot as required

Research Applications and Quality Assurance

Western Immunoblotting:
use 0.5 µg/ml

Immunoprecipitation:
not tested



Western Blotting Analysis:

HEK293 cells were transfected with vectors expressing HA-MAPK15 wildtype (WT) or HA-MAPK15 (catalytically inactive mutant D154A). At 36 hr post-transfection, the cells were exposed for 10 or 30 mins to 1 mM hydrogen peroxide (H₂O₂). The cells were then lysed and the lysates denatured in SDS and subjected to SDS-PAGE on 8% gels. Western Blotting was carried out with 0.5 µg/ml anti-MAPK15 antibody (Cat# 68-0040-100) on 60 µg total cell extract.



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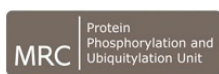
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Lot-specific COA version tracker: v1.0.0



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creasing LC3B (microtubule-associated protein 1 light chain 3B) inhibitory phosphorylation. The results from this study suggest a new function for MAPK15 as a regulator of autophagy, acting through interactions with ATG8 family proteins. Also, based on the key role of this process in several human diseases, these results support the therapeutic targeting of this MAP kinase (Colecchia *et al.*, 2012).

Antibody Production:

Anti-MAPK15 (human) polyclonal antibody was raised in sheep against MAPK15 (residues 1-544 of human MAPK15). The antibodies were purified by the Medical Research Council Protein Phosphorylation and Ubiquitylation Unit (MRC-PPU, University of Dundee, Dundee, U.K.) by affinity purification of the anti-MAPK15 pAbs from the sheep serum using a 6His-tagged antigen-agarose column. Anti-MAPK15 (human) pAb was sourced by Ubiquigent directly from the MRC-PPU.

General References:

Abe MK, Saelzler MP, Espinosa R, 3rd, Kahle KT, Hershenson MB, Le Beau MM, *et al.* (2002) ERK8, a new member of the mitogen-activated protein kinase family. *J Biol Chem* **277**, 16733-16743.

Colecchia D, Strambi A, Sanzone S, Iavarone C, Rossi M, Dall'Armi C, *et al.* (2012) MAPK15/ERK8 stimulates autophagy by interacting with LC3 and GABARAP proteins. *Autophagy* **8**, 1724-1740.

Application References:

Klevernic IV, Stafford MJ, Morrice N, Peggie M, Morton S and Cohen P (2006) Characterization of the reversible phosphorylation and activation of ERK8. *Biochem J* **394**, 365-373.

Klevernic IV, Martin NM and Cohen P (2009) Regulation of the activity and expression of ERK8 by DNA damage. *FEBS Lett* **583**, 680-684.



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