ARG55258
anti-p38 MAPK antibody

Package: 100 µl, 50 µl
Store at: -20°C

Summary

Product Description	Rabbit Polyclonal antibody recognizes p38 MAPK
Tested Reactivity	Hu, Ms, Rat
Tested Application	ICC/IF, WB
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Target Name	p38 MAPK
Species	Human
Immunogen	Recombinant protein of Human MAPK14 (Swiss: Q16539).
Conjugation	Un-conjugated
Alternate Names	CSBP2; PRKM14; MAX-interacting protein 2; SAPK2A; Stress-activated protein kinase 2a; CSBP1; Mxi2; EC 2.7.11.24; CSBP; SAPK2a; RK; CSPB1; MAPK 14; p38; MAP kinase 14; MAP kinase MXI2; Cytokine suppressive anti-inflammatory drug-binding protein; MAP kinase p38 alpha; Mitogen-activated protein kinase p38 alpha; EXIP; CSAID-binding protein; p38ALPHA; PRKM15; Mitogen-activated protein kinase 14

Application Instructions

Application table

Application	Dilution
ICC/IF	1:50 - 1:200
WB	1:500 - 1:2000

Application Note: * The dilutions indicate recommended starting dilutions and the optimal dilutions or concentrations should be determined by the scientist.

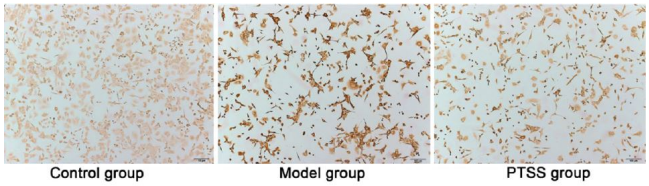
Properties

Form	Liquid
Purification	Affinity purification with immunogen.
Buffer	PBS (pH 7.3), 0.02% Sodium azide and 50% Glycerol
Preservative	0.02% Sodium azide
Stabilizer	50% Glycerol
Storage instruction	For continuous use, store undiluted antibody at 2-8°C for up to a week. For long-term storage, aliquot and store at -20°C. Storage in frost free freezers is not recommended. Avoid repeated freeze/thaw cycles. Suggest spin the vial prior to opening. The antibody solution should be gently mixed before use.
Note	For laboratory research only, not for drug, diagnostic or other use.

Bioinformation

Gene Symbol	MAPK14
Gene Full Name	mitogen-activated protein kinase 14
Background	The protein encoded by this gene is a member of the MAP kinase family. MAP kinases act as an integration point for multiple biochemical signals, and are involved in a wide variety of cellular processes such as proliferation, differentiation, transcription regulation and development. This kinase is activated by various environmental stresses and proinflammatory cytokines. The activation requires its phosphorylation by MAP kinase kinases (MKKs), or its autophosphorylation triggered by the interaction of MAP3K7IP1/TAB1 protein with this kinase. The substrates of this kinase include transcription regulator ATF2, MEF2C, and MAX, cell cycle regulator CDC25B, and tumor suppressor p53, which suggest the roles of this kinase in stress related transcription and cell cycle regulation, as well as in genotoxic stress response. Four alternatively spliced transcript variants of this gene encoding distinct isoforms have been reported. [provided by RefSeq, Jul 2008]
Function	Serine/threonine kinase which acts as an essential component of the MAP kinase signal transduction pathway. MAPK14 is one of the four p38 MAPKs which play an important role in the cascades of cellular responses evoked by extracellular stimuli such as proinflammatory cytokines or physical stress leading to direct activation of transcription factors. Accordingly, p38 MAPKs phosphorylate a broad range of proteins and it has been estimated that they may have approximately 200 to 300 substrates each. Some of the targets are downstream kinases which are activated through phosphorylation and further phosphorylate additional targets. RPS6KA5/MSK1 and RPS6KA4/MSK2 can directly phosphorylate and activate transcription factors such as CREB1, ATF1, the NF-kappa-B isoform RELA/NFKB3, STAT1 and STAT3, but can also phosphorylate histone H3 and the nucleosomal protein HMGN1. RPS6KA5/MSK1 and RPS6KA4/MSK2 play important roles in the rapid induction of immediate-early genes in response to stress or mitogenic stimuli, either by inducing chromatin remodeling or by recruiting the transcription machinery. On the other hand, two other kinase targets, MAPKAPK2/MK2 and MAPKAPK3/MK3, participate in the control of gene expression mostly at the post-transcriptional level, by phosphorylating ZFP36 (tristetraprolin) and ELAVL1, and by regulating EEF2K, which is important for the elongation of mRNA during translation. MKNK1/MNK1 and MKNK2/MNK2, two other kinases activated by p38 MAPKs, regulate protein synthesis by phosphorylating the initiation factor EIF4E2. MAPK14 interacts also with casein kinase II, leading to its activation through autophosphorylation and further phosphorylation of TP53/p53. In the cytoplasm, the p38 MAPK pathway is an important regulator of protein turnover.
Highlight	Related Antibody Duos and Panels: ARG30272 Phospho p38 MAPK Antibody Duo (Total, pThr180/Tyr182) Related products: p38 MAPK antibodies; p38 MAPK Duos / Panels; Anti-Rabbit IgG secondary antibodies;
Research Area	Cancer antibody; Immune System antibody; Signaling Transduction antibody; NF-kB Activation Study antibody
Calculated Mw	41 kDa
PTM	Dually phosphorylated on Thr-180 and Tyr-182 by the MAP2Ks MAP2K3/MKK3, MAP2K4/MKK4 and MAP2K6/MKK6 in response to inflammatory citokines, environmental stress or growth factors, which activates the enzyme. Dual phosphorylation can also be mediated by TAB1-mediated autophosphorylation. TCR engagement in T-cells also leads to Tyr-323 phosphorylation by ZAP70. Dephosphorylated and inactivated by DUPS1, DUSP10 and DUSP16. PPM1D also mediates dephosphorylation and inactivation of MAPK14 (PubMed:21283629). Acetylated at Lys-53 and Lys-152 by KAT2B and EP300. Acetylation at Lys-53 increases the affinity for ATP and enhances kinase activity. Lys-53 and Lys-152 are deacetylated by HDAC3. Ubiquitinated. Ubiquitination leads to degradation by the proteasome pathway.

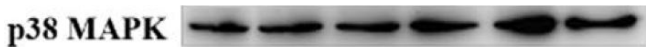
Images



ARG55258 anti-p38 MAPK antibody ICC-IF image

Immunofluorescence: Rat brain stained with ARG55258 anti-p38 MAPK antibody.

From Zhuang W et al. Neurochem Res- (2020), doi: 10.1007/s11064-020-03067-2, Fig. 6. A.



ARG55258 anti-p38 MAPK antibody WB image

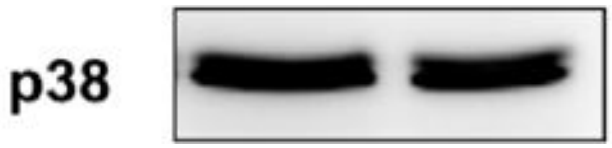
Western blot: HaCaT stained with ARG55258 anti-p38 MAPK antibody.

From Fang PH et al. Molecular Medicine (2022), doi: 10.1186/s10020-022-00499-0, Fig. 5. C.

ARG55258 anti-p38 MAPK antibody WB image

Western blot: Rat brain stained with ARG55258 anti-p38 MAPK antibody.

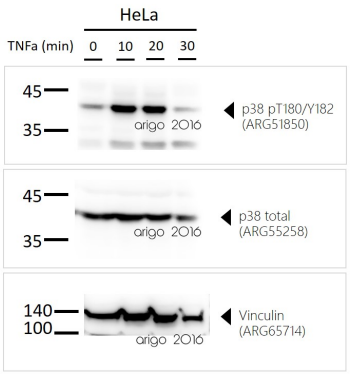
From Zhuang W et al. Neurochem Res- (2020), doi: 10.1007/s11064-020-03067-2, Fig. 7. C.



ARG55258 anti-p38 MAPK antibody WB image

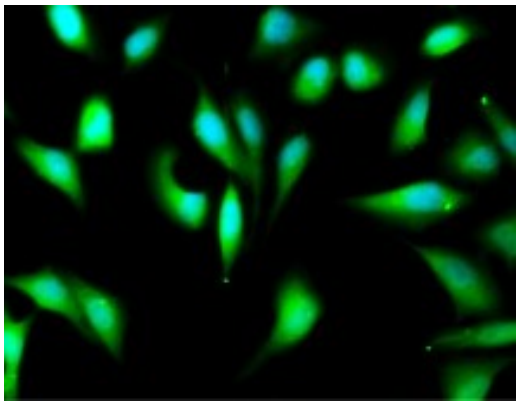
Western blot: MC3T3-E1 stained with ARG55258 anti-p38 MAPK antibody.

From Chou LY et al. Int J Mol Sci- (2020), doi: 10.3390/ijms21197210, Fig. 7. C.



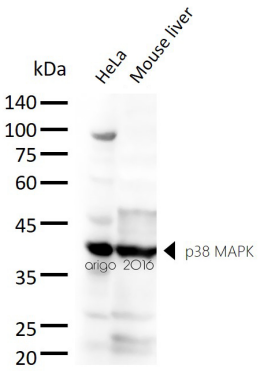
ARG55258 anti-p38 MAPK antibody WB image

Western blot: 30 µg of HeLa treated with TNFa at 0, 10, 20, and 30 min. The blots stained with ARG51850 anti-P38 MAPK phospho (Thr180/Tyr182) antibody, ARG55258 anti-p38 MAPK antibody, and ARG65714 anti-Vinculin antibody.



ARG55258 anti-p38 MAPK antibody ICC/IF image

Immunofluorescence: A549 cell stained with ARG55258 anti-p38 MAPK antibody. Blue: DAPI for nuclear staining.



ARG55258 anti-p38 MAPK antibody WB image

Western blot: 30 µg of HeLa, and Mouse liver lysate stained with ARG55258 anti-p38 MAPK antibody at 1:2000 dilution.