Phospho-MAPKAPK2 (Thr334) (H2) rabbit mAb

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Catalog: #2176 **Store at:** -20ºC

For Research Use Only. Not For Use In Diagnostic Procedures.

Applications	Detection	Clonality	Isotype
Flow Cytometry,WB	Anti-Rabbit IgG	Monoclonal	Rabbit IgGk

Format: Unconjugated

Cross Reactivity: Predicted to work with mouse, rat and other homologues.

Formulation: 1X PBS, 0.02% NaN3, 50% Glycerol, 0.1% BSA

Preparation: Protein A+G

Reactivity: Human,Mouse

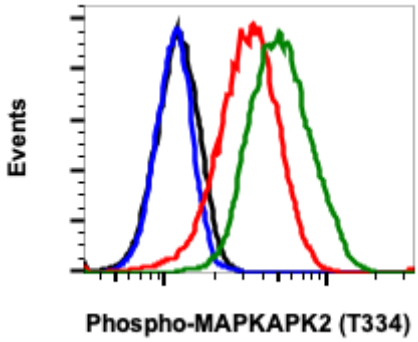
Recommended Usage: 1µg/mL – 0.001µg/mL. It is recommended that the reagent be titrated for optimal performance for each application. See product image legends for additional information.

Immunogen: A synthetic phospho-peptide corresponding to residues surrounding Thr334 of human phospho MAPKAPK-2.

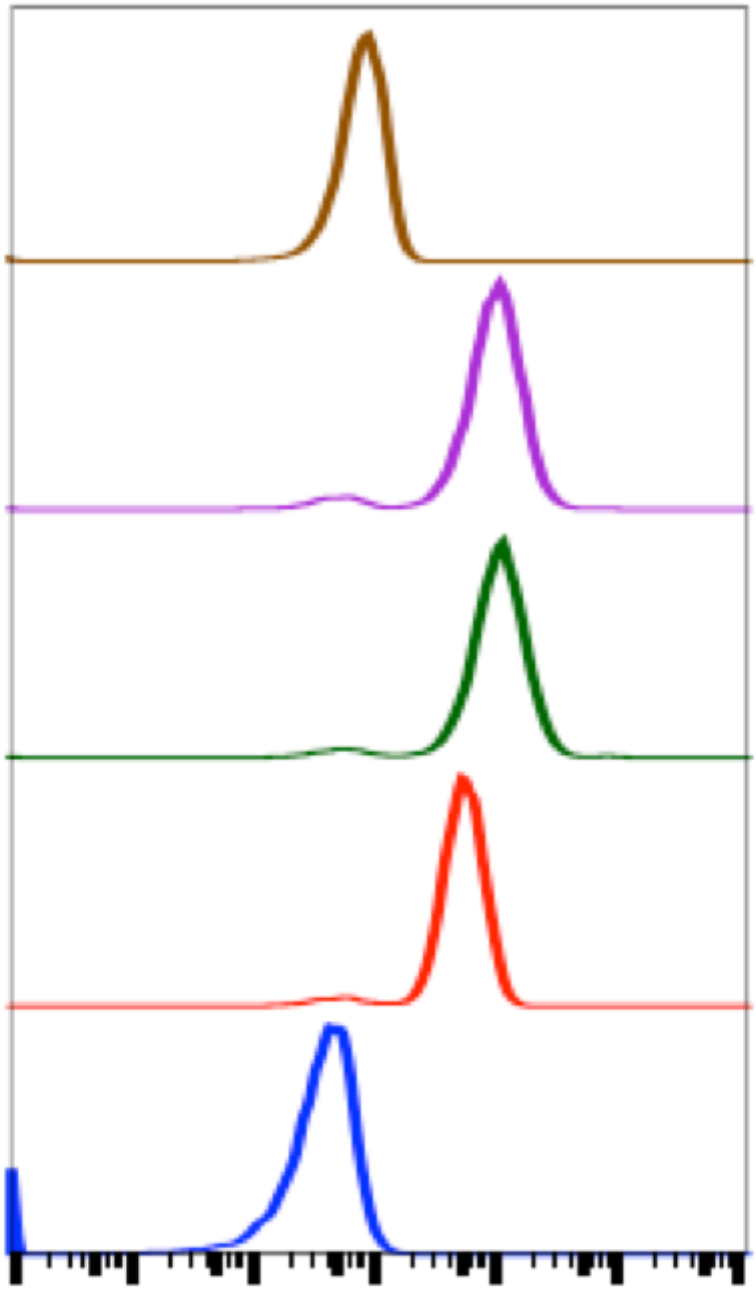
Description: Mitogen-activated protein kinase (MAPK)–activated protein kinase 2 (phospho MAPKAPK-2 or phospho MK2) is phosphorylated and activated by the p38 MAPK and it is known to transduce a range of extracellular signals that result in inflammatory response, cell division and differentiation, apoptosis, and cell motility (1,2). p38 MAPK through MK2 regulates biosynthesis of tumor necrosis factor α (TNFα) and other cytokines (3). In addition, MK2 is involved with phosphorylating of heat shock protein 27 (Hsp27)(4), pointing to prominent role for MK2 in cancer promotion. MK2 is also activated after DNA damage (5,6), resulting in cell cycle arrest such that cells have the capacity to repair their DNA and continue to proliferate. p38 MAPK phosphorylate MK2 in response to stress stimuli at Thr222, Ser272 and Thr334 (7). Thr334 phosphorylation serves as a switch for phospho MAPKAPK-2 nuclear import and export. In resting cells, p38 MAPK and MK2 form a complex in the nucleus (7). Cellular stress causes the phosphorylation of p38 MAPK by upstream kinases, such as MAPK kinase 3. The activated p38 MAPK then phosphorylates MK2 at Thr222, Ser272, and/or Thr334. When activated at Thr334, both p38 MAPK and MK2 translocate to the cytoplasm. Phosphorylation at Thr222 within the activation loop is crucial for MK2-dependent activation of several target substrates, including enzymes, proteins that regulate cytoskeleton motility, mRNA-binding proteins, and regulators of the cell cycle and apoptosis (8).

References:

1. Kotlyarov A, et al., (2002) Mol Cell Biol 22:4827–35.
2. Hillig RC, et al., (2007) J Mol Biol 369:735–45.
3. Kotlyarov A, et al., (1999) Nat Cell Biol 1:94–7.
4. Stokoe D, et al., (1992) EMBO J 11:3985–94.
5. Manke IA, et al., (2005) Mol Cell 17:37–48.
6. Reinhardt HC, et al., (2007) Cancer Cell 11:175–89.
7. Ben-Levy R, et al., (1998) Curr Biol 8:1049–57.
8. Gaestel M (2013) Biol Chem 394:1301–15.



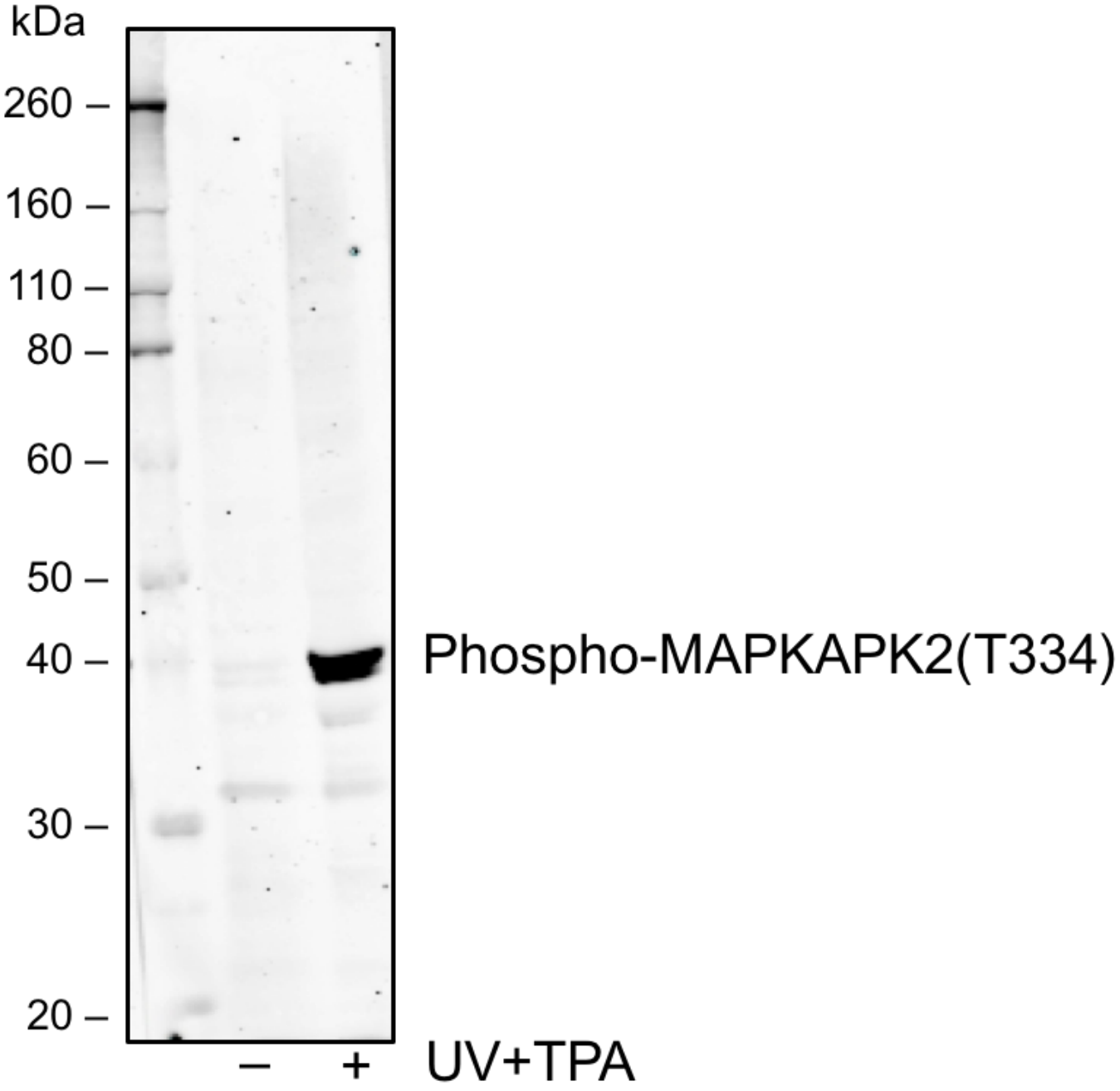
Flow cytometric analysis of NIH3T3 cells untreated (red) or treated with UV (green) using Phospho-MAPKAPK2 (Thr334) (H2) Rabbit mAb MAPKAPK2T334-H2 #2176 at 0.05 ug/mL, or concentration-matched Rabbit (G9) mAb IgG Isotype Control #2141 for cells untreated (black) or treated with UV (blue).



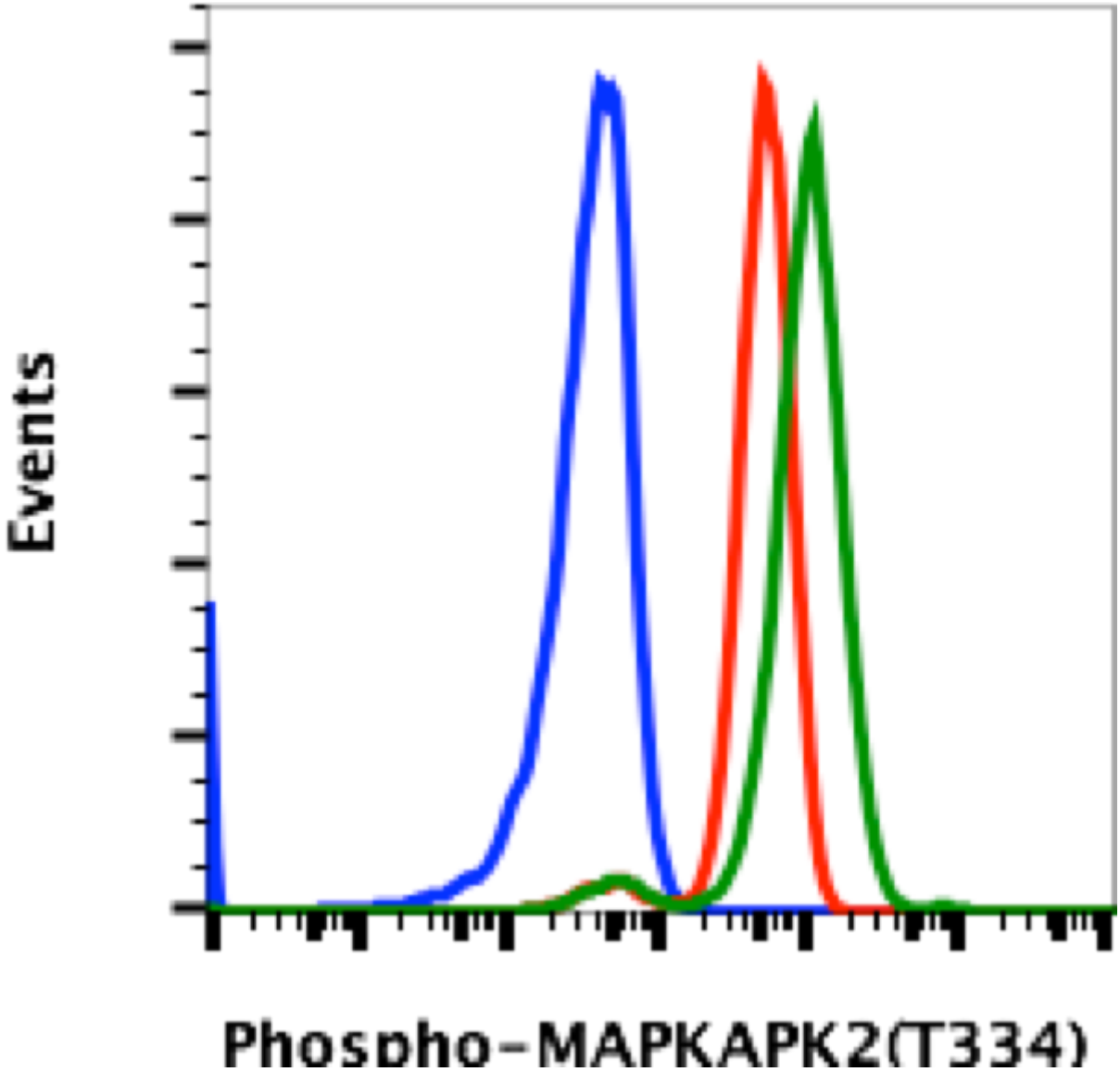
Phospho-MAPKAPK2(T334)

	$WELLID	Treatment	Median : BL1-A
	H2 + phospho peptide	CalA	755
	H2 + non-phospho peptide	CalA	8933
	H2 0.1 ug/mL	CalA	9689
	H2 0.1 ug/mL	Ctrl	4941
	2'Ab	Ctrl	364

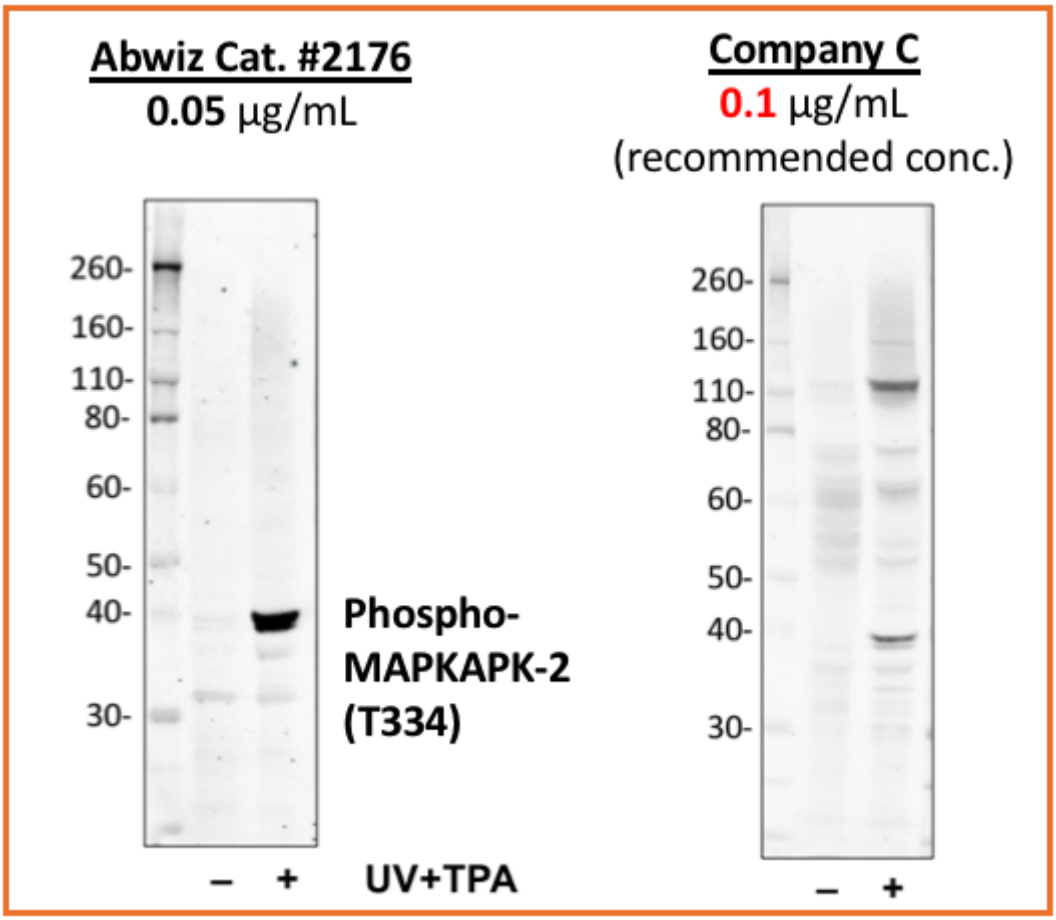
Flow cytometric analysis of U937 cells secondary antibody only negative control (blue) or untreated (red) treated with CalA (green) with 10X non-phospho peptide (violet) or phospho-peptide (brown) using Phospho-MAPKAPK2 (T334) antibody MAPKAPK2T334-H2 0.1 µg/mL. Cat. #2176.



Western blot analysis of Hela cell extract untreated or treated with UV +TPA using 0.05 µg/mL Phospho-MAPKAPK2 (Thr334) antibody MAPKAPK2T334-H2. Cat. #2176.



Flow cytometric analysis of U937 cells secondary antibody only negative control (blue) or untreated (red) or treated with CalA (green) using Phospho-MAPKAPK2 (T334) antibody MAPKAPK2T334-H2 0.1 µg/mL. Cat. #2176.



Western blot analysis of HeLa cell extract untreated or treated with UV+TPA using 0.05 µg/mL Phospho-MAPKAPK-2 (Thr334) antibody MAPKAPK2T334-H2 Cat. #2176 or Company C antibody at 0.1 µg/mL (manufacturer's recommended concentration).