Phospho-MAPKAPK2 (Thr334) (H2) rabbit mAb APC conjugate

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Applications	Detection	Clonality	Isotype
Flow Cytometry	N/A	Monoclonal	Rabbit IgGk

Format: APC

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

Formulation: 1X PBS, 0.09% NaN3, 0.2% BSA

Preparation: Protein A+G

Reactivity: Human,Mouse

Recommended Usage: For flow cytometric staining, the suggested use of this reagent is 5 µL per million cells or 5 µL per 100 µL of staining volume. It is recommended that the reagent be titrated for optimal performance for each application.

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:

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5. Manke IA, et al., (2005) Mol Cell 17:37–48.
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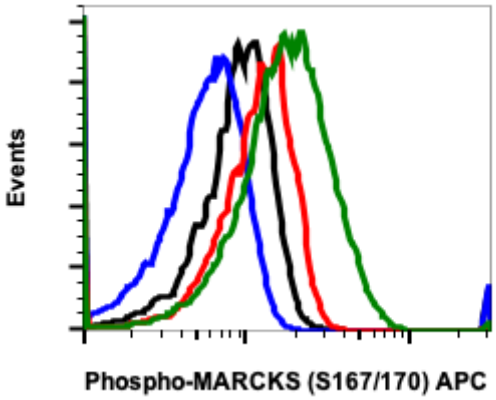

Flow cytometric analysis of C6 cells treated with staurosporine (red) or treated with UV+TPA (green) using Phospho-MARCKS (Ser167/170) (C9) Rabbit mAb (APC Conjugate) MARCKSS160170-C9 #2449, or concentration-matched Rabbit (G9) mAb IgG Isotype Control (APC Conjugate) #2144 for cells treated with staurosporine (black) or treated with UV+TPA (blue).