

MK2_A for Immunoprecipitation of MK2 from mammalian cell extract

Only for research applications, not for diagnostic or therapeutic use.

Introduction MK2 belongs to the family of serine/threonine kinases. In response to cellular stress it is phosphorylated and activated by MAP kinase p38. MK2-Trap is excellent for fast and efficient one-step isolation of MK2 and its interacting factors from cellular extract. Isolated MK2 protein may be used further for immunoblot analysis, mass spectrometry, and kinase assays. MK2-Trap utilizes small recombinant alpaca antibody fragments covalently coupled to the surface of agarose beads.

Specificity Species-Reactivity: tested on human, mouse, hamster
Posttranslational Modifications: MK2-Trap recognizes unphosphorylated MK2 and Phospho-MK2 (Thr222). Specificity on Phospho-MK2 (Thr334) was not tested.

Content	Reagent	Code	Quantity
	MK2-Trap_A	mta-20	20 reactions (0.5 ml slurry)
	MK2-Trap_A	mta -100	100 reactions (2.5 ml slurry)
	MK2-Trap_A	mta -200	200 reactions (5 ml slurry)
	MK2-Trap_A	mta -400	400 reactions (10 ml slurry)

Bead properties Bead size: ~ 90 µm (cross-linked 4% agarose beads)
Storage buffer: 20% EtOH

Stability and Storage Shipped at ambient temperature. Upon receipt store at +4°C.
Stable for 1 year. Do not freeze.

Required solutions **Suggested buffer composition**

Buffer	Composition
Lysis buffer (CoIP)	10 mM Tris/Cl pH 7.5; 150 mM NaCl; 0.5 mM EDTA; 0.5% NP-40
RIPA buffer	10 mM Tris/Cl pH 7.5; 150 mM NaCl; 0.5 mM EDTA; 0.1% SDS; 1% Triton X-100; 1% Deoxycholate
Dilution/Wash buffer	10 mM Tris/Cl pH 7.5; 150 mM NaCl; 0.5 mM EDTA
Glycine-elution buffer	200 mM glycine pH 2.5
2 x SDS-sample buffer	120 mM Tris/Cl pH 6.8; 20% glycerol; 4% SDS, 0.04% bromophenol blue; 10% β-mercaptoethanol

Related products	MK2 Toolbox	Code
	MK2-Trap protein	mt-250
	MK2-Trap_A Kit	mtak-20
	Blocked agarose beads	bab-20
	Spin columns	sct-10; sct-20; sct-50

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Protocol for Immunoprecipitation of MK2-Fusion Proteins using MK2-Trap_A

Harvest cells

For one immunoprecipitation reaction the use of $\sim 10^6$ - 10^7 mammalian cells (approx. one 10-cm dish) is recommended. To harvest adherent cells, aspirate growth medium, add 1 ml ice-cold PBS to cells and scrape cells from dish. Transfer cells to a pre-cooled tube, spin at 500 g for 3 min at +4°C and discard supernatant. Wash cell pellet twice with ice-cold PBS, gently resuspending the cells. After washing:

Lyse cells

1. Resuspend cell pellet in 200 μ l ice-cold lysis buffer by pipetting or using a syringe.
note: Supplement lysis buffer with protease inhibitors and 1 mM PMSF (not included).
optional for nuclear/chromatin proteins: Use RIPA buffer supplemented with 1 mg/ml DNase, 2.5 mM MgCl₂, protease inhibitors and 1 mM PMSF (not included).
2. Place the tube on ice for 30 min with extensively pipetting every 10 min.
3. Centrifuge cell lysate at 20.000x g for 10 min at +4°C. Transfer lysate to a pre-cooled tube. Add 300 μ l dilution buffer to lysate. Discard pellet.
note: At this point cell lysate may be put at -80°C for long-term storage.
optional: Add 1 mM PMSF and protease inhibitors (not included) to dilution buffer.

Equilibrate beads

4. Vortex MK2_A beads and pipette 25 μ l bead slurry into 500 μ l ice-cold dilution buffer. Centrifuge at 2.500x g for 2 min at +4°C. Discard supernatant and repeat wash twice.

Bind proteins

5. Add diluted lysate (step 3) to equilibrated MK2_A beads (step 4). If required, save 50 μ l of diluted lysate for immunoblot analysis. Tumble end-over-end for 1 hour at 4°C.
6. Centrifuge at 2.500x g for 2 min at +4°C. If required, save 50 μ l supernatant for immunoblot analysis. Discard remaining supernatant.

Wash beads

7. Resuspend MK2_A beads in 500 μ l ice-cold dilution buffer. Centrifuge at 2.500x g for 2 min at +4°C. Discard supernatant and repeat wash twice.
optional: Increase salt concentration in the second washing step up to 500 mM.

Elute proteins

8. Resuspend MK2_A beads in 100 μ l 2x SDS-sample buffer.
9. Boil resuspended MK2_A beads for 10 min at 95°C to dissociate immunocomplexes from MK2_A beads. MK2_A beads can be collected by centrifugation at 2.500x g for 2 min at 4°C and SDS-PAGE is performed with the supernatant.
10. *optional instead of steps 8 and 9: elute bound proteins by adding 50 μ l 0.2 M glycine pH 2.5 (incubation time: 30 sec under constant mixing) followed by centrifugation. Transfer the supernatant to a new tube and add 5 μ l 1M Tris base pH 10.4 for neutralization. To increase elution efficiency this step can be repeated.*

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