Arp2/3 Complex Regulation

Antibody Sampler Kit

Cat. # AK6390
Size Kit

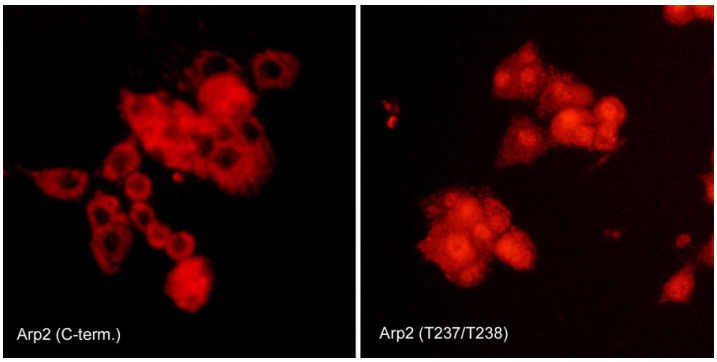
Kit Summary

The Arp2/3 complex regulation antibody sampler kit can be used to examine phosphorylation of the Arp2/3 complex subunit Arp2, as well as the Arp2/3 complex regulators N-WASP/WASP and Coronin-1B. The kit contains antibodies to monitor total expression levels of each of these proteins relative to site-specific phosphorylation.

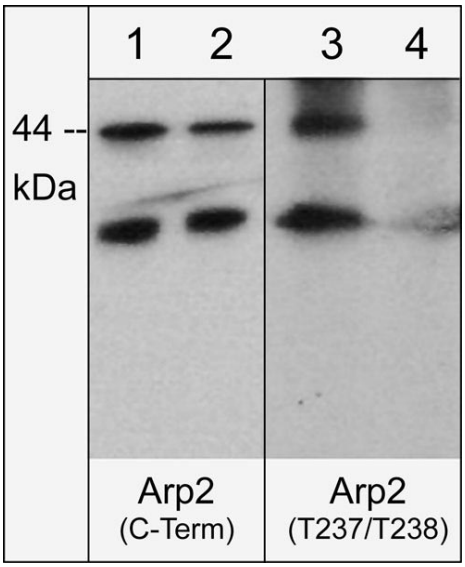
Kit Components

Cat. #	Description	Product Type	Size	Applications	Species Reactivity	WB Dilution
AP3861	Arp2 (C-terminal region)	Rabbit pAb	50 µl	WB, E, ICC, IP	Hu, Rt, Ms, Ck, Fr	1:1000
AP3871	Arp2 (Thr-237/Thr-238), phospho-specific	Rabbit pAb	50 µl	WB, E, ICC	Hu, Rt, Ms, Ck	1:1000
CP2581	Coronin-1B (C-terminus)	Rabbit pAb	50 µl	WB, E, ICC	Hu, Rt, Ms	1:1000
CP2621	Coronin-1B (Ser-2), phospho-specific	Rabbit pAb	50 µl	WB, E, ICC	Hu, Rt, Ms	1:1000
WP2101	WASP / N-WASP	Rabbit pAb	50 µl	WB, E, ICC	Hu, Rt, Ms	1:1000
WP2601	N-WASP (Tyr-256), phospho-specific	Rabbit pAb	50 µl	WB, E, ICC	Hu, Rt, Ms	1:1000

Applications: WB = Western blot, E = ELISA, ICC = Immunocytochemistry, IP = Immunoprecipitation, IHC = Immunohistochemistry, FC = Flow Cytometry
Species: H = Human, R = Rat, Ms = Mouse, C = Chicken, F = Fish, Fr = Frog, Rb = Rabbit



Immunocytochemical labeling of Arp2 phosphorylation in rat PC12 cells differentiated with NGF. The cells were probed with Arp2 (C-terminal region) and Arp2 (Thr-237/Thr-238) rabbit polyclonal antibodies, then the antibodies were detected using appropriate secondary antibody conjugated to Cy3.



Western blot of human A431 cells treated with Calyculin A (100 nM) for 30 min. Blot lanes were untreated (lanes 1 & 3) or treated with lambda phosphatase (lanes 2 & 4) then probed with anti-Arp2 (C-terminal) (lanes 1 & 2) or anti-Arp2 (T237/T238) (lanes 3 & 4).

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Background

Cellular morphology, adhesion, and motility occur through dynamic reorganization of actin-based superstructures. Actin-binding proteins are critical for regulating actin polymerization and superstructure formation. The Arp2/3 complex is an actin polymerization-inducing complex that includes Arp2, Arp3, p41-Arc, p34-Arc, p21-Arc, p20-Arc, and p16-Arc. Several nucleation promoting factors, such as WASP and coronin, regulate the activity of the Arp2/3 complex. In addition, the Arp2/3 complex may be regulated by phosphorylation of specific subunits in the complex. Arp2 has two phosphosites, Thr-237 and Thr-238, that are evolutionarily conserved, and are phosphorylated along with Tyr-202 in response to growth factor stimulation. These phosphorylation events may regulate binding to the pointed end of actin filaments, and alanine substitutions of these Arp2 phosphosites inhibit membrane protrusions. Thus, phosphorylation may be another mode of Arp2/3 complex regulation in addition to the activity of nucleation-promoting factors.

Background References

Kelleher, J.F. et al. (1995). J Cell Biol. 131(2):385.

LeClaire, L.L. et al (2008). J Cell Biol. 182(4):647.

Buffer and Storage

Rabbit polyclonal antibodies are supplied in phosphate-buffered saline (PBS), 50% glycerol, 1 mg/ml BSA, and 0.05% sodium azide. Store at –20°C. Stable for 1 year.

Product Citations

Cat. #	Citation & Application
AP3861	Machlus, K.R. et al. (2016) Blood. 127(11):1468. (WB: mouse megakaryocytes)
AP3861	Osma-Garcia, I.C. et al. (2015) Eur J Immunol. doi: 10.1002 (WB: mouse macrophages)
AP3861	Park, M. et al. (2013) J Biol Chem 288:33324. (WB: human brain microvascular endothelial cells hCMEC/D3)
AP3861	Spillane, M. et al. (2012) J Neurosci. 32(49):17671. (ICC: chick embryonic neuron)
AP3861	Kalwa, H. & Michel, T. (2011) J Biol Chem. 286(3):2320. (WB: bovine aortic endothelial cells)
AP3871	Morov, AR et al. (2016) Open Biol. Jun;6(6) pii:160062. (IHC: amphioxus)
AP3871	Lauterborn, J.C. et al. (2017) Cereb Cortex. 27(4):2640. (WB: rat hippocampus)
AP3871	Machlus, K.R. et al. (2016) Blood. 127(11):1468. (WB: mouse megakaryocytes)
AP3871	Osma-Garcia, I.C. et al. (2015) Eur J Immunol. doi: 10.1002 (WB: mouse macrophages)
AP3871	Park, M. et al. (2013) J Biol Chem 288:33324. (WB: human brain microvascular endothelial cells hCMEC/D3)
AP3871	Kalwa, H. & Michel, T. (2011) J Biol Chem. 286(3):2320. (WB: bovine aortic endothelial cells)

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