Revision 1

Store at -20C

#4888

NF-κB Non-Canonical Pathway Antibody Sampler Kit

1 Kit (8 x 20 microliters)

Cell Signaling TECHNOLOGY®

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Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
Phospho-IKKα/β (Ser176/180) (16A6) Rabbit mAb	2697	20 µl	85 IKK-alpha 87 IKK-beta kDa	Rabbit IgG
IKKα (3G12) Mouse mAb	11930	20 µl	85 kDa	Mouse IgG1
Phospho-NF-κB2 p100 (Ser866/870) Antibody	4810	20 µl	110 kDa	Rabbit
NF-κB2 p100/p52 Antibody	4882	20 µl	52 (mature). 120 (precursor). kDa	Rabbit
NIK Antibody	4994	20 µl	125 kDa	Rabbit
RelB (C1E4) Rabbit mAb	4922	20 µl	70 kDa	Rabbit IgG
TRAF2 Antibody	4712	20 µl	53 kDa	Rabbit
TRAF3 Antibody	4729	20 µl	62 kDa	Rabbit
Anti-rabbit IgG, HRP-linked Antibody	7074	100 µl		Goat
Anti-mouse IgG, HRP-linked Antibody	7076	100 µl		Horse

Please visit cellsignal.com for individual component applications, species cross-reactivity, dilutions, protocols, and additional product information.

Description

This kit contains reagents to examine the activation state and total protein levels of key components in the noncanonical NF-κB pathway: TRAF2, TRAF3, NIK, IKKα, p100, and RelB.

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

Background

Transcription factors of the nuclear factor κB (NF-κB)/Rel family play a pivotal role in inflammatory and immune responses (1,2). There are five family members in mammals: RelA, RelB, c-Rel, NF-κB1 (p105/p50) and NF-κB2 (p100/p52). Both p105 and p100 are proteolytically processed by the proteasome to produce p50 and p52, respectively. The p50 and p52 products form dimeric complexes with Rel proteins. While p50 associates with many of the NF-κB family members, p52 tends to form dimers primarily with RelB. A plethora of stimuli such TNFα and LPS induce the canonical NF-κB pathway, characterized by the activation of the classical IκB Kinase (IKK) complex (containing IKKα, IKKβ, IKKγ, and ELKS), which then phosphorylates inhibitory IκB molecules, targeting them for rapid degradation through a ubiquitin-proteasome pathway (3).

The noncanonical pathway, triggered by BAFF, CD40L, and certain other stimuli, is based on the inducible phosphorylation and proteasome-mediated partial degradation of NF-κB2 p100 to p52, a process regulated by the NF-κB Inducing Kinase (NIK) and IKKα, but not IKKβ or IKKγ (4-6). NIK phosphorylates IKKα at Ser176/180 (6) and p100 at Ser866/870, then recruits IKKα to p100 where IKKα phosphorylates additional residues in the N- and C-terminus (8), leading to the ubiquitination and processing of p100 (9). The TNF Receptor Associated Factor molecules TRAF2 and TRAF3 have been shown to be negative regulators of the noncanonical pathway (10, 11), and their differential binding to receptors may also play a role in determining whether transduced signals activate the canonical pathway, noncanonical pathway, or both (12). TRAF3 promotes the rapid turnover of NIK in resting cells, and its activation-induced degradation is a key regulatory point in the pathway (13). This pathway is required for B cell maturation and activation, proper architecture of peripheral lymphoid tissue, and safeguards against autoimmunity (14).

Background References

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