

**Orders:** 877-616-CELL (2355)  
orders@cellsignal.com

**Support:** 877-678-TECH (8324)

**Web:** info@cellsignal.com  
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

Store at -20C

#4888

# NF- $\kappa$ B Non-Canonical Pathway Antibody Sampler Kit

1 Kit (8 x 20 microliters)

**For Research Use Only. Not for Use in Diagnostic Procedures.**

Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
Phospho-IKK $\alpha$ / $\beta$ (Ser176/180) (16A6) Rabbit mAb	2697	20 $\mu$ l	85 IKK-alpha 87 IKK-beta kDa	Rabbit IgG
IKK $\alpha$ (3G12) Mouse mAb	11930	20 $\mu$ l	85 kDa	Mouse IgG1
Phospho-NF- $\kappa$ B2 p100 (Ser866/870) Antibody	4810	20 $\mu$ l	110 kDa	Rabbit
NF- $\kappa$ B2 p100/p52 Antibody	4882	20 $\mu$ l	52 (mature). 120 (precursor). kDa	Rabbit
NIK Antibody	4994	20 $\mu$ l	125 kDa	Rabbit
RelB (C1E4) Rabbit mAb	4922	20 $\mu$ l	70 kDa	Rabbit IgG
TRAF2 Antibody	4712	20 $\mu$ l	53 kDa	Rabbit
TRAF3 Antibody	4729	20 $\mu$ l	62 kDa	Rabbit
Anti-rabbit IgG, HRP-linked Antibody	7074	100 $\mu$ l		Goat
Anti-mouse IgG, HRP-linked Antibody	7076	100 $\mu$ l		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- $\kappa$ B pathway: TRAF2, TRAF3, NIK, IKK $\alpha$ , p100, and RelB.

## Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100  $\mu$ g/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  $\kappa$ B (NF- $\kappa$ B)/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- $\kappa$ B1 (p105/p50) and NF- $\kappa$ B2 (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- $\kappa$ B family members, p52 tends to form dimers primarily with RelB. A plethora of stimuli such TNF $\alpha$  and LPS induce the canonical NF- $\kappa$ B pathway, characterized by the activation of the classical I $\kappa$ B Kinase (IKK) complex (containing IKK $\alpha$ , IKK $\beta$ , IKK $\gamma$ , and ELKS), which then phosphorylates inhibitory I $\kappa$ B 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- $\kappa$ B2 p100 to p52, a process regulated by the NF- $\kappa$ B Inducing Kinase (NIK) and IKK $\alpha$ , but not IKK $\beta$  or IKK $\gamma$  (4-6). NIK phosphorylates IKK $\alpha$  at Ser176/180 (6) and p100 at Ser866/870, then recruits IKK $\alpha$  to p100 where IKK $\alpha$  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

- Baeuerle, P.A. and Henkel, T. (1994) *Annu Rev Immunol* 12, 141-79.
- Baeuerle, P.A. and Baltimore, D. (1996) *Cell* 87, 13-20.
- Ghosh, S. and Karin, M. (2002) *Cell* 109 Suppl, S81-96.
- Xiao, G. et al. (2001) *Mol Cell* 7, 401-9.
- Senftleben, U. et al. (2001) *Science* 293, 1495-9.
- Xiao, G. et al. (2001) *EMBO J* 20, 6805-15.
- Ling, L. et al. (1998) *Proc Natl Acad Sci USA* 95, 3792-7.
- Xiao, G. et al. (2004) *J Biol Chem* 279, 30099-105.
- Liang, C. et al. (2006) *Cell Signal* 18, 1309-17.

10. Xia, Z.P. and Chen, Z.J. (2005) *Sci STKE* 2005, pe7.
  11. Liao, G. et al. (2004) *J Biol Chem* 279, 26243-50.
  12. Morrison, M.D. et al. (2005) *J Biol Chem* 280, 10018-24.
  13. Qing, G. et al. (2005) *J Biol Chem* 280, 40578-82.
  14. Xiao, G. et al. (2006) *Cytokine Growth Factor Rev* 17, 281-93.
- 

## Trademarks and Patents

Cell Signaling Technology is a trademark of Cell Signaling Technology, Inc.

All other trademarks are the property of their respective owners. Visit [cellsignal.com/trademarks](http://cellsignal.com/trademarks) for more information.

## Limited Uses

Except as otherwise expressly agreed in a writing signed by a legally authorized representative of CST, the following terms apply to Products provided by CST, its affiliates or its distributors. Any Customer's terms and conditions that are in addition to, or different from, those contained herein, unless separately accepted in writing by a legally authorized representative of CST, are rejected and are of no force or effect.

Products are labeled with For Research Use Only or a similar labeling statement and have not been approved, cleared, or licensed by the FDA or other regulatory foreign or domestic entity, for any purpose. Customer shall not use any Product for any diagnostic or therapeutic purpose, or otherwise in any manner that conflicts with its labeling statement. Products sold or licensed by CST are provided for Customer as the end-user and solely for research and development uses. Any use of Product for diagnostic, prophylactic or therapeutic purposes, or any purchase of Product for resale (alone or as a component) or other commercial purpose, requires a separate license from CST. Customer shall (a) not sell, license, loan, donate or otherwise transfer or make available any Product to any third party, whether alone or in combination with other materials, or use the Products to manufacture any commercial products, (b) not copy, modify, reverse engineer, decompile, disassemble or otherwise attempt to discover the underlying structure or technology of the Products, or use the Products for the purpose of developing any products or services that would compete with CST products or services, (c) not alter or remove from the Products any trademarks, trade names, logos, patent or copyright notices or markings, (d) use the Products solely in accordance with CST Product Terms of Sale and any applicable documentation, and (e) comply with any license, terms of service or similar agreement with respect to any third party products or services used by Customer in connection with the Products.