

# NF- $\kappa$ B Pathway Sampler Kit

Cat# AK0206

Upon receipt, store at -20°C. Avoid freeze/thaw cycles.

## PRODUCT DESCRIPTION

The transcriptional nuclear factor  $\kappa$  B (NF- $\kappa$  B)/Rel transcription factors are present in the cytosol in an inactive state, complexed with the inhibitory I $\kappa$  B proteins. Activation occurs via phosphorylation of I $\kappa$  B  $\alpha$  at Ser32 and Ser36, resulting in the ubiquitin-mediated proteasome-dependent degradation of I $\kappa$  B  $\alpha$  and the release and nuclear translocation of active NF- $\kappa$  B dimers. The regulation of I $\kappa$  B  $\beta$  and I $\kappa$  B  $\epsilon$  is similar to that of I $\kappa$  B  $\alpha$ , however, the phosphorylation and degradation of these proteins occurs with much slower kinetics. Phosphorylation of I $\kappa$  B  $\beta$  occurs at Ser/Thr19 and Ser23, while I $\kappa$  B  $\epsilon$  can be phosphorylated at Ser18 and Ser22. The key regulatory step in this pathway involves activation of a high molecular weight I $\kappa$ B kinase (IKK) complex, consisting of three tightly associated IKK subunits. IKK  $\alpha$  and IKK  $\beta$  serve as the catalytic subunits of the kinase. Activation of IKK depends on phosphorylation at Ser177 and Ser181 in the activation loop of IKK  $\beta$  (176 and 180 in IKK  $\alpha$ ). NF- $\kappa$  B-inducing kinase (NIK), TANK-binding kinase 1 (TBK1), and its homolog IKK  $\epsilon$  (IKKi), phosphorylate and activate IKK  $\alpha$  and IKK  $\beta$ . The NF- $\kappa$  B family of transcription factors is comprised of five proteins in mammals, p65/RelA, c-Rel, RelB, NF- $\kappa$  B1 (p105/p50) and NF- $\kappa$  B2 (p100/p52). p105 and p100 are proteolytically processed to produce p50 and p52, respectively. The 50 kDa active form is produced through proteolytic processing following IKK-mediated phosphorylation of p105 at multiple sites (Ser922, 924, 928 and 933), while p100's processing to p52 is induced by phosphorylation of Ser864 and Ser868. The p50 and p52 products form dimeric complexes with Rel proteins, which are then able to bind DNA and regulate transcription. Phosphorylation of p65/RelA at Ser276 by PKA C and MSK1 enhances transcriptional activity. p65 phosphorylation at Ser536 regulates activation, nuclear localization, protein-protein interactions, and transcriptional activity. PMA-induced NF- $\kappa$  B transcriptional activity is dependent on the region of p65 containing the potential ph

## PRODUCT INCLUDES

Cat No.	Product name	Quantity	Applications	Reactivity	Host
A340559	IKK alpha Polyclonal Antibody	20 $\mu$ L	WB, IHC, ELISA	Human, Mouse, Rat	Rabbit
A340240	Phospho-IKK alpha (Thr23) Polyclonal Antibody	20 $\mu$ L	WB, IHC, ELISA	Human, Mouse, Rat	Rabbit

<b>A340248</b>	Phospho-IkB alpha (Ser32/S36) Polyclonal Antibody	20µL	WB, IHC, IF, ELISA	Human, Mouse, Rat, Monkey	Rabbit
<b>A340573</b>	IkB alpha Polyclonal Antibody	20µL	WB, IHC, IF, ELISA	Human, Mouse, Rat	Rabbit
<b>A340241</b>	Phospho-IKK alpha/beta (Ser176/177) Polyclonal Antibody	20µL	WB, IHC, ELISA	Human, Mouse, Rat	Rabbit
<b>A340242</b>	Phospho-IKK alpha/beta (Ser180/181) Polyclonal Antibody	20µL	WB, IHC, ELISA	Human, Mouse, Rat	Rabbit
<b>A340561</b>	IKK beta Polyclonal Antibody	20µL	WB, IHC, ELISA	Human, Mouse, Rat	Rabbit
<b>A340608</b>	NFκB-p65 Polyclonal Antibody	20µL	WB, IHC, ELISA	Human, Mouse, Rat	Rabbit
<b>A340263</b>	Phospho-NFκB-p65 (Ser536) Polyclonal Antibody	20µL	WB, IHC, IP, ELISA	Human, Mouse, Rat, Monkey	Rabbit
<b>A1013s</b>	Goat Anti-Rabbit IgG (H+L) (peroxidase/HRP conjugated)	120µL	WB, ELISA	Rabbit	Goat

## **PRODUCT USE LIMITATION**

These products are intended for research use only.