

# Product Datasheet

## RelA/NFkB p65 [p Ser529, p Ser536] Inhibitor Peptide Set NBP2-29321

Unit Size: 2 mg

Aliquot and store at -20C or -80C. Avoid freeze-thaw cycles.

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**NBP2-29321**

RelA/NFkB p65 [p Ser529, p Ser536] Inhibitor Peptide Set

Product Information	
Unit Size	2 mg
Concentration	Lyoph
Storage	Aliquot and store at -20C or -80C. Avoid freeze-thaw cycles.
Reconstitution Instructions	Please contact technical support for detailed reconstitution instructions.
Product Description	
Gene ID	5970
Gene Symbol	RELA
Species	Human, Mouse, Rat, Bovine, Canine
Reactivity Notes	Broad: Peptide sequence is 100% conserved across multiple species.
Immunogen	Functions as a p65 decoy through phosphorylation of the Ser529/536 sites on the peptide.
Preparation Method	<p>Preparation of 5 mM Stock Solutions            PBS* is added directly to the vials to prepare the stock solutions.            Note: Bring the solution to room temperature and quick spin the tubes before opening the caps. NF-kB p65(Ser529/536) Inhibitor Peptide: 1 mg of DRQIKIWFQNRMMKWKKNGLLSGDEDFSS            Add 54.1 ul PBS* to the vial, to make a 5 mM stock solution. Mix by vortexing. Aliquot and store at -20C or -80C. Avoid repeated freeze thawing.</p> <p>Control Peptide: 1 mg of DRQIKIWFQNRMMKWKK            Add 84.8 ul PBS* to the vial. Mix by vortexing. Aliquot and store at -20C or -80C. Avoid repeated freeze thawing.</p> <p>*Recipe for 1X PBS:            1. Dissolve the following in 800ml distilled H2O.            - 8g of NaCl            - 0.2g of KCl            - 1.44g of Na2HPO4            - 0.24g of KH2PO4            2. Adjust pH to 7.5 with HCl.            3. Adjust volume to 1L with additional distilled H2O.            4. Sterilize by autoclaving</p>
Inhibitor Family	NFkB
Inhibitor Target	NFkB p65
Inhibitor Content	Inhibitor peptide (NBP2-31224): 2 x 1 mg (lyophilized) DRQIKIWFQNRMMKWKKNGLLSGDEDFSS (p65 sequence: NGLLSGDEDFSS). Molecular weight: 3697.21 Antennapedia Control peptide (NBP2-29334): 2 x 1 mg (lyophilized) DRQIKIWFQNRMMKWKK. Molecular weight: 2361

**Product Application Details**

**Application Notes**Inhibition of NF- $\kappa$ B activity.

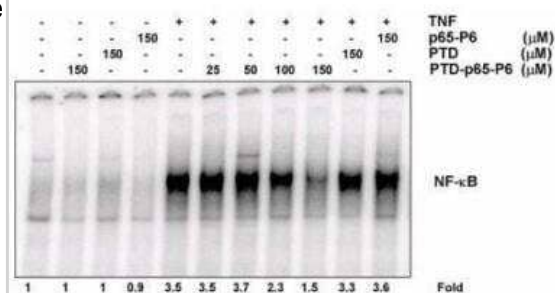
Researchers can study the effect of p65 inhibitor peptide using a variety of methods. Following is a general protocol for KBM-5 cells. It may need to be optimized for different cell types.

Preincubate cells with appropriate amounts of inhibitory or control peptides for 1 hr and then treat with TNF or other NF- $\kappa$ B activating agents. Prepare nuclear extracts and check for the presence of NF- $\kappa$ B DNA binding activity by EMSA (Figure 1). Nuclear extracts can be prepared as described by Bharati A, et al, 2003 and Takada et al, 2004 or using nuclear extraction kit.

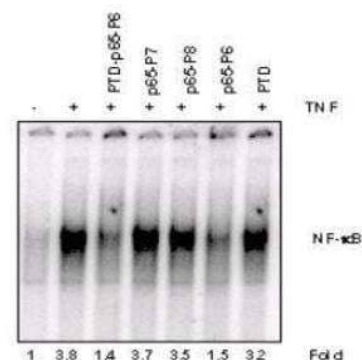
Please refer to Takada et al, 2004 for further details on the use of this inhibitory peptide.

**Images**

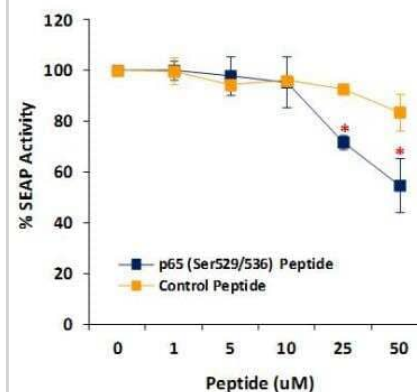
Western Blot: RelA/NF $\kappa$ B p65 [p Ser529, p Ser536] Inhibitor Peptide Set [NBP2-29321] - Inhibits TNF-induced NF- $\kappa$ B activation: KBM-5 cells were incubated with various concentrations of peptides for 1 hr and treated with 0.1nM TNF for 30min. Nuclear extracts were prepared and NF- $\kappa$ B activation was analyzed by EMSA (Please refer to Takada et al, 2004 for further details). PTD-p65-P6 suppresses TNF-induced NF- $\kappa$ B activation by 25% at 100 uM and completely at 150 uM, whereas the control peptide, PTD or p65-P6 without PTD did not have any effect.



Western Blot: RelA/NF $\kappa$ B p65 [p Ser529, p Ser536] Inhibitor Peptide Set [NBP2-29321] - Effect of various p65-inhibitor peptides on binding of purified recombinant p65 protein to the DNA in vitro. Recombinant p65 protein (100 ng/sample) was incubated for 30 minutes with 50uM of various peptides in 0.025 ml and then assayed for DNA binding activity by EMSA (Please refer to Takada et al, 2004 (3) for further details).



Functional (Inhibition): RelA/NF $\kappa$ B p65 [p Ser529, p Ser536] Inhibitor Peptide Set [NBP2-29321] - TLR5/NF- $\kappa$ B/SEAPorter HEK 293 (NBP2-26277) cells were plated in 96-well plates at  $5 \times 10^4$  cells/well for 16 h. Cells were preincubated with different concentrations (0, 1, 5, 10, 25 and 50 uM) of Inhibitory Peptide (NBP2-29321) and Control Peptide (NBP2-29334) for 1 h. Cells were then stimulated with 1 ng/ml Flagellin (NBP2-25289) for 24 h. Secreted alkaline phosphatase (SEAP) was analyzed using SEAPorter Assay Kit (NBP2-25285). \* $p < 0.05$  versus control peptide at the corresponding concentrations (Mann-Whitney U test).



## Publications

Yu J, Berga SL, Zou W et al. IL-1B Inhibits Connexin 43 and Disrupts Decidualization of Human Endometrial Stromal Cells through ERK1/2 and p38 MAP Kinase *Endocrinology* 2017-09-11 [PMID: 28938400]

Almarghani A, Settem RP, Croft AJ et al. Interleukin-34 permits Porphyromonas gingivalis survival and NF- $\kappa$ B p65 inhibition in macrophages *Molecular Oral Microbiology* 2022-06-01 [PMID: 35576119]

Rajasekaran V. Tissue Transglutaminase (TG2) is a potential therapeutic target in the treatment of chemoresistant breast cancer. *Breast Cancer Res* 2012-01-10 [PMID: 22225906]

Sherman LS, Patel SA, Castillo MD Et al. Nf kappa B Targeting in Bone Marrow Mesenchymal Stem Cell-Mediated Support of Age-Linked Hematological Malignancies *Stem cell reviews and reports* 2021-08-19 [PMID: 34410592]

Yang D, Li S, Duan X TLR4 induced Wnt3a-Dvl3 restrains the intensity of inflammation and protects against endotoxin-driven organ failure through GSK3beta/beta-catenin signaling *Mol. Immunol.* 2019-12-26 [PMID: 31884387] (Human, Mouse)

Mukohda M, Lu KT, Guo DF et al. Hypertension-Causing Mutation in Peroxisome Proliferator-Activated Receptor  $\gamma$  Impairs Nuclear Export of Nuclear Factor- $\kappa$ B p65 in Vascular Smooth Muscle. *Hypertension* 2017-05-15 [PMID: 28507170] (Mouse)

Mukohda M, Stump M, Ketsawatsomkron P et al. Endothelial PPAR $\gamma$  Provides Vascular Protection from IL-1B-Induced Oxidative Stress. *Am. J. Physiol. Heart Circ. Physiol.* 2015-11-13 [PMID: 26566726]

Qiao Hongwen, Zhu Lin, Lieberman Brian P et al. Synthesis and evaluation of novel tropane derivatives as potential PET imaging agents for the dopamine transporter. *Bioorg Med Chem Lett.* 2012-07-01 [PMID: 22658558]

Golden D, Saria EA, Hansen MF. Regulation of Osteoblast Migration Involving Receptor Activator of Nuclear Factor (NF)- $\kappa$ B (RANK) Signaling *J. Cell. Physiol.* 2015-04-20 [PMID: 25893522]

Krupinski Elizabeth A. Virtual slide telepathology workstation of the future: lessons learned from teleradiology. *Hum Pathol.* 2009-08-01 [PMID: 19552939] (Human)

Li J, Liu Y, Zhang X. Murine coronavirus induces type I interferon in oligodendrocytes through recognition by RIG-I and MDA5. *J Virol.* 2010-07-01 [PMID: 20427526] (Mouse)

### Details:

Functional Assay (TransAM ELISA): N20.1 cell line (mouse oligodendrocytes) infected with MHV-A59/GFP virus, Fig 7B, 7C, and 7D. Fig 7B, Readout assay: NF $\kappa$ B activation. Cells treated with NF- $\kappa$ B p65 inhibitory peptide (IMG-2003) showed significant inhibition

Rebholz B, Kehe K, Ruzicka T, Rupec RA. Role of NF- $\kappa$ B/RelA and MAPK pathways in keratinocytes in response to sulfur mustard. *J Invest Dermatol.* 2008-07-01 [PMID: 18200059] (Mouse)

### Details:

Mouse Keratinocytes, Fig. 6

More publications at <http://www.novusbio.com/NBP2-29321>



## Procedures

### MSDS (NBP2-29321)

RelA/NFkB p65 [p Ser529, p Ser536] Inhibitor Peptide Set:

#### Hazard Information

Chemical Name: Non hazardous products

Chemical Formula: N/A

CAS Number: N/A

EEC-No: N/A

#### Hazard Identification

None

#### First Aid Measures

Eye Contact: None

Skin Contact: None

Inhalation: None

Ingestion: None

#### Accidental Release Measures

This product either does not contain hazardous constituents or the concentration of all chemical constituents are below the regulatory threshold limits described by Occupational Safety Health Administration Hazard Communication Standard 29 CFR 1910.1200 and the European Directive 91/155/EEC. 88/379/EEC, and 67/546/EEC.

#### Handling and Storage

Exposure Controls / Personal Protection

Other Precautions: None

#### Physical and Chemical Properties

Form: N/A

Color: N/A

Odor: N/A

Melting Point: N/A

Boiling Temperature: N/A

Density: N/A

Vapor Pressure: N/A

Solubility in Water: N/A

Flash Point: N/A

Explosion limits: N/A

Ignition Temperature: N/A





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### **Products Related to NBP2-29321**

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NBP2-24987-5ug	Recombinant Human RelA/NFkB p65 Protein
210-TA-005	TNF-alpha [Unconjugated]
NBP2-29661-1Kit	Human, Mouse, Rat RelA/NFkB p65 ELISA Kit (Colorimetric)
M6000B-1	IL-6 [HRP]

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### **Limitations**

This product is for research use only and is not approved for use in humans or in clinical diagnosis. Inhibitors are guaranteed for 1 year from date of receipt.

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