

PRODUCT DATA

Product name(s):	NF- κ B p65 Subunit (12-317), untagged (human, recombinant). [Ubiquitinylation/SUMOylation substrate]				
Catalogue number:	UW9995	Batch number:	Temp	Expiry date:	12 months from receipt

Product information:

The eukaryotic nuclear factor κ B (NF- κ B) plays an important role in inflammation, autoimmune response, cell proliferation, and apoptosis by regulating the expression of genes involved in these processes¹. Misregulation of the NF- κ B signal transduction pathway is observed in a variety of human cancers, especially those of lymphoid cell origin².

The prototypical inducible NF- κ B is a heterodimeric complex consisting of p50 and p65, which normally exists in the cytoplasm of the cell as an inactive form due to association with its major inhibitory protein, I κ B α ³. I κ B α prevents the transport of NF- κ B into the nucleus by masking its nuclear localization signal^{1,4}.

Activation of NF- κ B by extracellular inducers depends on the phosphorylation and subsequent degradation of I κ B α by the ubiquitin-proteasome pathway^{3,5}.

p65 subunit

The NF- κ B p65 subunit is usually thought of as conferring the activation function of the NF- κ B complex⁶, though its capacity to associate with κ B DNA in the absence of p50 and its potential utility as an independent transcription factor have also been demonstrated⁷.

Product data

UW9995 is a recombinant protein expressed in *E. coli* BL21 (λ DE3) corresponding to human NF- κ B p65 subunit (12-317) (accession number: Q04206, length: 307 amino acids). The molecular weight of the expressed protein is 34945Da. The purity, assessed by SDS-PAGE following GST tag cleavage, is >95%.



1 2

Coomassie stained gel of NF- κ B p65 subunit (12-317), untagged (human, recombinant) (UW9995). Lane 1: MW markers (top to bottom) 205, 116, 97, 66, 55, 45, 36, 29, 24, 20. Lane 2: UW9995 (2 μ g).

Storage and use:

Material is supplied at a concentration of 0.5mg/mL in 50mM HEPES, pH7.5, 50mM NaCl, 1mM DTT. For long term storage store at -80°C . Avoid multiple freeze/thaw cycles. After initial defrost, aliquot into individual tubes and refreeze at -80°C .

References:

1. Baeuerle, P.A. and Baltimore, D. I kappa B: a specific inhibitor of the NF-kappa B transcription factor. *Science*. **242**, 540-546 (1988)
2. Gilmore, T., Gapuzan, M. E., Kalaitzidis, D., and Starczynowski, D. Rel/NF-kappa B/I kappa B signal transduction in the generation and treatment of human cancer. *Cancer Lett.* **181**, 1-9 (2002)
3. Baldwin, A.S., Jr. The NF-kappa B and I kappa B proteins: new discoveries and insights. *Annu.Rev.Immunol.* **14**, 649-683 (1996)
4. Beg, A.A., Ruben, S. M., Scheinman, R. I., Haskill, S., Rosen, C. A., and Baldwin, A. S., Jr. I kappa B interacts with the nuclear localization sequences of the subunits of NF-kappa B: a mechanism for cytoplasmic retention. *Genes Dev.* **6**, 1899-1913 (1992)
5. Tanaka, K., Kawakami, T., Tateishi, K., Yashiroda, H., and Chiba, T. Control of I κ B α proteolysis by the ubiquitin-proteasome pathway. *Biochimie.* **83**, 351-356 (2001)
6. Urban, M.B. and Baeuerle, P. A. The 65-kD subunit of NF-kappa B is a receptor for I kappa B and a modulator of DNA-binding specificity. *Genes Dev.* **4**, 1975-1984 (1990)
7. Ruben, S.M., Narayanan, R., Klement, J. F., Chen, C. H., and Rosen, C. A. Functional characterization of the NF-kappa B p65 transcriptional activator and an alternatively spliced derivative. *Mol.Cell Biol.* **12**, 444-454 (1992)