

**Guinea Pig Expression Clone IL-4,
Recombinant in *Escherichia coli***

Catalog No. NR-36038

For research use only. Not for human use.

Contributor:

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Manufacturer:

BEI Resources

Product Description:

The guinea pig is an animal model for testing novel tuberculosis vaccine candidates because it mimics human tuberculosis. The host response to vaccination and infection can be further investigated utilizing recombinant guinea pig proteins. It is known that interleukin 4, IL-4, is involved in humoral immune responses, allergic reactions and asthma. It has been suggested that IL-4 may also have an important role in susceptibility to pulmonary tuberculosis.¹

NR-36038 is an expression clone containing the mature peptide region of IL-4 (GenBank: [NM_001257263](#)) from *Cavia porcellus* (guinea pig). The coding sequence of the IL-4 gene was cloned into vector pET-30a(+) via BamHI and HindIII insertion sites and transformed into *Escherichia coli* (*E. coli*) NovaBlue competent cells. After the presence of the insert was verified, the plasmid DNA was isolated and transformed into *E. coli*, strain Rosetta 2(DE3) for protein expression. The pET-30a(+) vector contains a T7 promoter, genes to allow kanamycin and chloramphenicol resistance, an N-terminal His-tag for purification, and the *lacI* gene which is used for enhanced protein expression via IPTG induction.^{1,2} Refer to Table 1 for protein sequence for NR-36038.

Material Provided:

Each vial contains approximately 0.5 mL of *E. coli*, strain Rosetta 2(DE3) in Luria Bertani (LB) broth containing 15 µg/mL kanamycin and 34 µg/mL chloramphenicol supplemented with 10% glycerol.

Note: If homogeneity is required for your intended use, please purify prior to initiating work.

Packaging/Storage:

NR-36038 was packaged aseptically in plastic cryovials. The product is provided frozen and should be stored at -60°C or colder immediately upon arrival. For long-term storage, the vapor phase of a liquid nitrogen freezer is recommended. Freeze-thaw cycles should be avoided.

Growth Conditions:

Media:

LB Broth or Agar containing 15 µg/mL kanamycin and 34 µg/mL chloramphenicol

Incubation:

Temperature: 37°C
Atmosphere: Aerobic

Propagation:

1. Scrape the top of the frozen vial with a sterile loop or pipette tip and streak onto a selective agar plate and/or inoculate a tube of selective broth. Return the vial to storage at -60°C or colder.
2. Incubate the plate and/or tube at 37°C for 18 to 24 hours.

Citation:

Acknowledgment for publications should read “The following reagent was obtained through BEI Resources, NIAID, NIH: Guinea Pig Expression Clone IL-4, Recombinant in *Escherichia coli*, NR-36038.”

Biosafety Level: 1

Appropriate safety procedures should always be used with this material. Laboratory safety is discussed in the following publication: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, and National Institutes of Health. Biosafety in Microbiological and Biomedical Laboratories. 5th ed. Washington, DC: U.S. Government Printing Office, 2009; see www.cdc.gov/biosafety/publications/bmbl5/index.htm.

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References:

1. Jeevan, A., et al. "Cloning of Guinea Pig IL-4: Reduced IL-4 mRNA after Vaccination or *Mycobacterium tuberculosis* Infection." *Tuberculosis (Edinb)*. 91 (2011): 47-56. PubMed: 21167782.
2. David N. McMurray, personal communication.

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Table 1. Amino acid sequence of expressed IL-4

MHHHHHSSG LVPRGSGMKE TAAAKFERQH MDSPDLGTDD DDKAMADIGS VVRGCNHHTL QEIIQHLNTL SREKSPCAEL
 LVTDVFADPQ GPASGDLCTA ATVLHHTAYL RGPQSCP NRE GDPLYPSVLR QVFRNLR SMA QSNCPVSELR QTTLKDFLEN
 LKRIMQK RYS KCRR
