Guinea Pig Expression Clone IL-1β, Recombinant in *Escherichia coli*

Catalog No. NR-36034

For research use only. Not for human use.

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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 1 beta, IL-1β, plays an important role in host resistance to mycobacteria and recombinant IL-1β has been found to drive proliferation in thymocytes.[1]

NR-36034 is an expression clone containing the mature peptide region of IL-1β (GenBank: AF119622) from *Cavia porcellus* (guinea pig). The complete IL-1β gene was cloned into vector pET-30a(+) via *Bam*HI and *Hind*III 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-36034.

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-36034 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-1β, Recombinant in *Escherichia coli*, NR-36034."

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. Dirisala, V. R., et al. "Prokaryotic Expression and In Vitro Functional Analysis of IL-1β and MCP-1 from Guinea Pig." Mol. Biotechnol. (2012): Epub ahead of print. PubMed: 22744745.
2. David N. McMurray, personal communication.

Support Provided by NIAID

Table 1. Amino acid sequence of expressed IL-1β

MHHHHHHSSG LVPRGSGMKE TAAAKFERQH MDSPDLGTDD DDKAMADIGS TPVPSRNCTL HDIQHKRLVL SDPCELKALH LNGDNLNRQV VFSMSFVQGE RSDNKMPVAL GLKGKNLYLS CVMKDGKPVL QLESVDGKQY PKKKMEKRFV FNKITSKSTV EFESAQFPNW YISTSQAEHK PVFLGNNNGQ DIIDFKLELV SS