

**Guinea Pig Expression Clone**  
**CD8 $\alpha$ /pUB6A**

**Catalog No. NR-36205**

**For research use only. Not for human use.**

**Contributor:**

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**Manufacturer:**

BEI Resources

**Product Description:**

NR-36205 is a full-length expression clone containing the CD8 $\alpha$  gene (GenBank: [NM\\_001172876](https://www.ncbi.nlm.nih.gov/nuccore/NM_001172876)) from guinea pig (*Cavia porcellus*). The CD8 $\alpha$  gene was cloned into vector pUB6A via *Bam*HI and *Eco*RI insertion sites, transformed into MAX Efficiency<sup>®</sup> *Escherichia coli* (*E. coli*) DH5 $\alpha$ ™ competent cells (Invitrogen™), and extracted using a QIAGEN<sup>®</sup> Plasmid Mega Kit.

**Note:** Sequencing results for NR-36205 revealed that most regions of the vector match the depositor's information, including the ampicillin resistance gene, ubiquitin C promoter, polyadenylation signals, and the pMB1 and f1 origins of replication. However, the blasticidin resistance gene and associated EM-7 promoter normally encoded by pUB6A have been completely replaced with the hygromycin resistance gene under control of the SV40 promoter (presumably taken from the pcDNA 3.1 vector). The resulting size of the plasmid is 6.801 kilobases. The plasmid map and the complete plasmid sequence are provided on the Certificate of Analysis for NR-36205.

CD8 is expressed on cytotoxic T cells and functions as a coreceptor for recognition of major histocompatibility complex class I peptide complexes by the T-cell receptor. The CD8 molecule consists of two subunits ( $\alpha$  and  $\beta$ ) and exists either as a heterodimer ( $\alpha\beta$ ) or a homodimer ( $\alpha\alpha$ ). The sequence homology of guinea pig CD8 indicates greater homology to human, canine, and feline counterparts than to rodent CD8. As the guinea pig serves as an ideal nonprimate animal model to several human diseases, such as syphilis, tuberculosis, and chlamydial genital and ocular infections, CD8 provides a unique molecular tool for studying cell-mediated immune response.<sup>1</sup>

**Material Provided:**

Each vial of NR-36205 contains approximately 1  $\mu$ g of plasmid DNA in TE buffer. The concentration is shown on the Certificate of Analysis.

**Note:** The vial labels for NR-36205 incorrectly state that the plasmid DNA is provided as an *E. coli* glycerol stock.

NR-36205 is purified plasmid DNA that was extracted from bacteria prior to vialing.

**Packaging/Storage:**

NR-36205 was packaged aseptically in plastic cryovials. The product is provided frozen on dry ice and should be stored at -20°C or colder immediately upon arrival. Freeze-thaw cycles should be minimized.

**Post-Transformation Growth Conditions:**

Media:

NR-36205 contains the gene required for ampicillin (Amp) resistance. The recommended concentration of Amp in culture is 100  $\mu$ g/mL.

Luria Bertani (LB) broth or equivalent  
 LB agar or equivalent

Incubation:

Temperature: 37°C  
 Atmosphere: Aerobic

Propagation:

Incubate the tube, slant and/or plate at 37°C for 24 hours.

**Citation:**

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: Guinea Pig Expression Clone CD8 $\alpha$ /pUB6A, NR-36205."

**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/bmb15/index.htm](http://www.cdc.gov/biosafety/publications/bmb15/index.htm).

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**References:**

1. Nagarajan, U. M., C. O'Connell, and R. G. Rank. "Molecular Characterization of Guinea-Pig (*Cavia porcellus*) CD8 $\alpha$  and CD8 $\beta$  cDNA." *Tissue Antigens* 63 (2004): 184-189. PubMed: 14705990.

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