## Certificate of Analysis for NR-14870

SUPPORTING INFECTIOUS DISEASE RESEARCH

Ag85B Recombinant Protein Reference Standard<br>Catalog No. NR-14870

This reagent is the tangible property of the U.S. Government.
Product Description: NR-14870 is a recombinant form of the antigen 85 complex B (Ag85B) protein. The recombinant protein consists of the native protein sequence in addition to a hexahistidine tag. The recombinant protein was expressed in Escherichia coli and purified using standard chromatographic techniques followed by endotoxin removal procedures.

Lot: 61792968
Manufacturing Date: 27JAN2014
Production and QC testing were performed by Colorado State University (CSU). The CSU documentation for lot 13.rEC.12.19.coc.MtbAg85b is attached.

ATCC ${ }^{\circledR}$, on behalf of BEI Resources, hereby represents and warrants that the material provided under this certificate has been subjected by the contractor to the tests and procedures specified and that the results described, along with any other data provided in this certificate, are true and accurate to the best of ATCC ${ }^{\circledR}$ 's knowledge.

ATCC ${ }^{\circledR}$ is a trademark of the American Type Culture Collection.
You are authorized to use this product for research use only. It is not intended for human use.

## Recombinant Protein Production and Quality Control Record

Date Production Started: 12/19/2013
Lot Number: 13.rEC.12.19.coc.MtbAg85b; 61792968
Notebook Number and Page Number: COC TB \#4 NOTEBOOK pp. 4-27
Production from Seed Culture/ Clone: no
Production from freshly-transformed Cells: yes
Host Strain used for Gene Expression: E. coli BL21 (DE3) pLysS
Recombinant Plasmid possessing the Recombinant Gene: pET-23b
Culture Type? Shake Flask $\qquad$ Stationary $\qquad$ Fermenter $\underline{x}$

Culture Size: 5L
Culture Medium: HyperBroth (Athena Enzyme Systems)
Selection (Antibiotic/ Concentration): $\quad \mathrm{Amp}^{100} \mathrm{Cam}^{34}$
Time and Temperature of culture prior to Induction: $3: 00,37.1^{\circ} \mathrm{C}$
Final Concentration of IPTG added for Induction: 0.5 mM
Method for Lysis of Cells: Probe Sonication
Protein Purification Procedures: His-bind Resin Purification
Date Production Finished: 01/27/2014

## NOTES ON PURIFICATION:

Cells were sonicated on ice with 60 second bursts followed by 90 second intervals.
His-bind resin purification per Novagen except for additional Endotoxin (ET) removal steps.

ET removal done by washing column with 10 column volumes (CV) of 10 mM Tris- HCl , followed by 10 CV of $0.5 \%$ ASB-14. This was again followed by 10 CV of 10 mM TrisHCl and eluted with 5 CV of 10 mM Tris- $\mathrm{HCl}+1 \mathrm{M}$ Imidazole +6 M urea. All buffers were $\mathrm{pH}=8.0$

Eluted proteins were exchanged into 10 mM Ammonium Bicarbonate +4 M urea; then into 10 mM Ammonium Bicarbonate +2 M urea; and finally into 10 mM Ammonium Bicarbonate .

## Quality Control

Lot Number: 13.rEC.12.19.coc.MtbAg85b; 61792968
Method for Determining Protein Concentration: BCA (Pierce)
Final Protein Concentration: $2.644 \mathrm{mg} / \mathrm{mL}$
Performed Endotoxin Removal? Yes
Endotoxin Contamination: 10.75 mg endotoxin/mg protein
Purity confirmed by SDS-PAGE and Silver Staining (see below)
Identity confirmed by Western Blot: $\qquad$ x $\qquad$ or Mass Spectrometry: $\qquad$ (see below)

Antibody used for Western Blot: IT-44 mouse monoclonal


Aliquot Information: $23 \times 1 \mathrm{mg} ; 1 \times 0.8 \mathrm{mg}$

Producer's Name:


