Brugia malayi cHAT Fusion Protein with N-Terminal Histidine Tag, Recombinant from *Escherichia coli*

Catalog No. NR-29381

For research use only. Not for human use.

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Manufacturer:
BEI Resources

Product Description:
A recombinant fusion of the *Brugia malayi* (*B. malayi*) heat shock protein 12.6 (Hsp12.6), abundant larval transcript 2 (ALT-2), and tetraspanin large extracellular loop (TSP-LEL) proteins (cHAT) containing an N-terminal histidine-tag was produced in *Escherichia coli* BL21-CodonPlus® (DE3)-RIL cells and purified under denaturing conditions using a combination of nickel affinity and size exclusion chromatography. The protein was refolded by dialysis in the final formulation buffer. Upon refolding, the recombinant protein formed high molecular weight aggregates that could not be fully denatured under standard SDS-PAGE conditions. See Certificate of Analysis for details.

B. malayi is a mosquito-borne filarial nematode worm that causes lymphatic filariasis.[1] Mosquitos deposit infective third stage larvae (L3) on human skin. The larvae then penetrate and migrate to the lymphatic vessels where they develop into adult worms over several months. Development includes molting transitions into fourth stage larvae (L4) and fifth stage larvae (L5) to reach maturation. The matured female worms release large numbers of microfilariae. The microfilariae are ingested by a mosquito during a blood meal and penetrate the midgut and develop over a period of 10 to 14 days to L3. The L3 are developmentally arrested in the mosquito. They repeat the process when the mosquito's proboscis penetrates human skin.[2]

Vaccination trials in mice have shown that trivalent HAT vaccines confer significant protection against *B. malayi* L3 challenge.[3] The approximately 40 kD recombinant fusion protein employed in those studies (rBmHAT) differs slightly from NR-29831, which has a theoretical molecular weight of 34 kD.

Material Provided:
Each vial contains 100 µg to 200 µg of purified recombinant fusion protein in 50 mM phosphate buffer (pH 7.5) with 500 mM NaCl, 25% glycerol (v/v) and 1 mM dithiothreitol (DTT). The concentration, expressed as µg per mL, is shown on the Certificate of Analysis.

Packaging/Storage:
NR-29381 was packaged aseptically. The product is provided on refrigerated bricks and should be stored at 4°C immediately upon arrival.

Citation:
Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: *Brugia malayi* cHAT Fusion Protein with N-Terminal Histidine Tag, Recombinant from *Escherichia coli*, NR-29381."

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.

Disclaimers:
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References:

1. Simonsen, P. E. and M. E. Mwakitalu. "Urban Lymphatic Filariasis." Parasitol. Res. 112 (2013): 35-44. PubMed: 23239094.
2. Li, B. W., et al. "Transcription Profiling Reveals Stage- and Function-Dependent Expression Patterns in the Filarial Nematode *Brugia malayi*." BMC Genomics 13 (2012): 184. PubMed: 22583769.
3. Dakshinamoorthy, G., et al. "Multivalent Fusion Protein Vaccine for Lymphatic Filariasis." Vaccine 31 (2013): 1616-1622. PubMed: 23036503.

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