Product Information Sheet for NR-46443

Ehrlichia chaffeensis, Strain Heartland

Catalog No. NR-46443

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For research use only. Not for use in humans.

Contributor:

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Manufacturer:

BEI Resources

Product Description:

Bacteria Classification: *Anaplasmataceae*, *Ehrlichia*
Species: *Ehrlichia chaffeensis*
Strain: Heartland
Original Source: *Ehrlichia chaffeensis (E. chaffeensis)*, strain Heartland was isolated in 1999 from the blood of a human with acute fatal monocytic ehrlichiosis (HME) in Nebraska, USA.[1,2]
Comments: The complete genome sequence of *E. chaffeensis,* strain Heartland has been determined (GenBank: CP007473).

E. chaffeensis is a Gram-negative, obligate intracellular pathogen of eukaryotic cells and belongs to the alpha subdivision of Proteobacteria. It was originally classified in the family *Rickettsiaceae*, but subsequently reassigned to the family *Anaplasmataceae*, both families belonging to the order Rickettsiales.[3] *E. chaffeensis* is transmitted to humans by the lone star tick (*Amblyomma americanum*) and is the causative agent of HME.[3,4]

Material Provided:

Each vial contains approximately 1 mL of cell lysate and supernatant from *Canis familiaris* macrophage-monocyte cells infected with *E. chaffeensis*, strain Heartland, supplemented with 45% heat-inactivated fetal bovine serum and 5% DMSO.

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

Packaging/Storage:

NR-46443 was packaged aseptically in cryovials. The product should be stored at -130°C or colder, preferably in the vapor phase of a liquid nitrogen freezer. If liquid nitrogen storage facilities are not available, frozen cryovials may be stored at -70°C or colder for approximately one week. Freeze-thaw cycles should be avoided.

Growth Conditions:

Host: *Canis familiaris* macrophage-monocyte cells (DH82; ATCC® CRL-3590™)
Growth Medium: Dulbecco's Modified Eagle's Medium containing 2 mM L-glutamine supplemented with 7% heat-inactivated fetal bovine serum or equivalent
Infection: Cells should be 40% to 60% confluent
Incubation: 7 to 9 days at 37°C and 5% CO_2
Cytopathic Effect: Cell enlargement, rounding, detachment, granularity or other toxicity may or may not be observed. It is recommended that replication of *E. chaffeensis* be confirmed by PCR or IFA or staining of morulae with modified Giemsa stain.[5]

Citation:

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: *Ehrlichia chaffeensis*, Strain Heartland, NR-46443."

Biosafety Level: 2

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 (BMBL). Current Edition. Washington, DC: U.S. Government Printing Office.

Disclaimers:

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References:

1. Rikihisa, Y., Personal Communication.
2. Cheng, C., C. D. Paddock and R. Reddy Ganta. "Molecular Heterogeneity of *Ehrlichia chaffeensis* Isolates Determined by Sequence Analysis of the 28-Kilodalton Outer Membrane Protein Genes and Other Regions of the Genome." Infect. Immun. 71 (2003): 187-195. PubMed: 12496165.
3. Dumler, J. S., et al. "Reorganization of Genera in the Families *Rickettsiaceae* and *Anaplasmataceae* in the Order *Rickettsiales*: Unification of Some Species of *Ehrlichia* with *Anaplasma*, *Cowdria* with *Ehrlichia* and *Ehrlichia* with *Neorickettsia*, Descriptions of Six New Species Combinations and Designation of *Ehrlichia equi* and 'HGE agent' as Subjective Synonyms of *Ehrlichia phagocytophila*." Int. J. Syst. Evol. Microbiol. 51 (2001): 2145-2165. PubMed: 11760958.
4. Ismail, N. and J. W. McBride. "Tick-Borne Emerging Infections: Ehrlichiosis and Anaplasmosis." Clin. Lab. Med. 37 (2017): 317-340. PubMed: 28457353.
5. Chen, S-M., et al. "Cultivation of *Ehrlichia chaffeensis* in Mouse Embryo, Vero, BGM, and L929 Cells and Study of *Ehrlichia*–Induced Cytopathic Effect and Plaque Formation." Infect. Immun. 63 (1995): 647-655. PubMed: 7822034.

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