

**Anaplasma phagocytophilum, Strain NCH-1**

**Catalog No. NR-48807**

**For research use only. Not for use in humans.**

**Contributor:**

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**Manufacturer:**

BEI Resources

**Product Description:**

Bacteria Classification: *Anaplasmataceae, Anaplasma*

Species: *Anaplasma phagocytophilum*

Strain: NCH-1

Original Source: *Anaplasma phagocytophilum* (*A. phagocytophilum*), strain NCH-1 was isolated in 1997 from the blood of a patient suffering from human granulocytic ehrlichiosis in Massachusetts, USA.<sup>1,2</sup>

Comments: The complete genome of *A. phagocytophilum*, strain NCH-1 has been sequenced (GenBank: [LANT00000000](https://www.ncbi.nlm.nih.gov/nuclseq/LANT00000000)).

*A. phagocytophilum* is a Gram-negative, obligate intracytoplasmic bacteria that infects bone marrow-derived mammalian cells, predominantly of the myeloid lineage.<sup>3</sup> The species was formerly known as *Ehrlichia phagocytophila* and classified in the family *Rickettsiaceae*, but subsequently reassigned to the family *Anaplasmataceae*, both families belonging to the order Rickettsiales.<sup>3</sup> *A. phagocytophilum* is transmitted by *Ixodes persulcatus* complex ticks and is the causative agent of tick-borne fever of ruminants, equine granulocytic ehrlichiosis, and human granulocytic ehrlichiosis (HGE).<sup>3,4</sup>

**Material Provided:**

Each vial contains approximately 1 mL of human promyelocytic leukemia cells (HL-60; ATCC® CCL-240™) infected with *A. phagocytophilum*, strain NCH-1, containing fetal bovine serum and DMSO (final concentrations are indicated on the Certificate of Analysis for each lot).

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

**Packaging/Storage:**

NR-48807 was packaged aseptically in screw-capped 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:**

Host: HL-60 cells (ATCC® CCL-240™)

Growth Medium: RPMI-1640 medium containing 2 mM L-glutamine, 10 mM HEPES, 4500 mg/L glucose, 1 mM sodium pyruvate and 1500 mg/L sodium bicarbonate, supplemented with 10% fetal bovine serum, or equivalent.

Infection: Cells should be at a dilution of 1 × 10<sup>5</sup> to 1 × 10<sup>6</sup> cells/mL.

Incubation: 8 days at 37°C and 5% CO<sub>2</sub>

Cytopathic Effect: Uninfected HL-60 cells are typically round with smooth borders. Infected cell borders are rough in appearance. It is recommended that replication of *A. phagocytophilum* be confirmed by indirect fluorescent antibody (IFA) assay.

**Citation:**

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: *Anaplasma phagocytophilum*, Strain NCH-1, NR-48807."

**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. 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. Carlyon, J., Personal Communication.
2. Telford, S. R., et al. "Perpetuation of the Agent of Human Granulocytic Ehrlichiosis in a Deer Tick-Rodent Cycle." Proc. Natl. Acad. Sci. USA 93 (1996): 6209-6214. PubMed: 8650245.
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. Dumler, J. S., et al. "Human Granulocytic Anaplasmosis and *Anaplasma phagocytophilum*." Emerg. Infect. Dis. 11 (2005): 1828-1834. PubMed: 16485466.

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