

***Rickettsia rickettsii*, Strain Lost Horse Canyon**

**Catalog No. NR-327**

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

**Contributor:**  
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**Product Description:**

Bacteria Classification: *Rickettsiaceae*, *Rickettsia*

Species: *Rickettsia rickettsii*

Strain: Lost Horse Canyon (VR-3042)

Original Source: *Rickettsia rickettsii* (*R. rickettsii*), strain Lost Horse Canyon was a yolk sac isolate from a *Dermacentor andersoni* tick in Lost Horse Canyon, Bitterroot Valley, Montana, 1958.<sup>1</sup>

Comments: *R. rickettsii*, strain Lost Horse Canyon was deposited to the ATCC® from the collection of Dr. F. Marilyn Bozeman.

*R. rickettsia* is a member of the spotted fever group of Rickettsiae and the etiologic agent of Rocky Mountain spotted fever (RMSF). *R. rickettsia* is an intracellular Gram-negative pathogen that is transmitted to a human host via interaction with an infected tick (commonly *Dermacentor variabilis* and *Dermacentor andersoni* in the USA). The tick acts as both a natural reservoir and a vector for disease transmission. The disease is characterized by a spotted rash and has a high mortality rate if it is not treated. RMSF responds well to treatment with doxycycline if diagnosis is not delayed.<sup>1</sup>

*R. rickettsii*, strain Lost Horse Canyon is an R-type isolate. R-type isolates are the most pathogenic and cause severe infection accompanied by long-lasting fever and scrotal reactions in guinea pigs. Additionally these isolates caused mortality in 30% of infected animals.<sup>2</sup>

**Material Provided:**

Each vial contains approximately 1 mL of cell lysate and supernatant from African green monkey kidney cells (Vero; ATCC® CCL-81™) infected with *R. rickettsii*, strain Lost Horse Canyon.

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

**Packaging/Storage:**

NR-327 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: Vero cells (ATCC® CCL-81™)

Growth Medium: Minimum Essential Medium with Earle's salts supplemented with 10% irradiated fetal bovine serum, 2 mM L-glutamine and 1 mM sodium pyruvate

Infection: Cells should be 80 to 90% confluent (not 100% confluent)

Incubation: 6 to 18 days at 35°C and 5% CO<sub>2</sub>

Cytopathic Effect: Cell rounding and sloughing

**Citation:**

Acknowledgment for publications should read "The following reagent was obtained through the NIH Biodefense and Emerging Infections Research Resources Repository, NIAID, NIH: *Rickettsia rickettsii*, Strain Lost Horse Canyon, NR-327."

**Biosafety Level: 3**

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, 2007; see [www.cdc.gov/od/ohs/biosfty/bmbl5/bmbl5toc.htm](http://www.cdc.gov/od/ohs/biosfty/bmbl5/bmbl5toc.htm).

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**References:**

1. Karpathy, S. E., G. A. Dasch and M. E. Ereemeeva. "Molecular Typing of Isolates of *Rickettsia rickettsii* by use of DNA Sequencing of Variable Intergenic Regions." J. Clin. Microbiol. 45 (2007): 2545-2553. PubMed: 17553977.
2. Ereemeeva, M. E., G. A. Dasch and D. J. Silverman. "Quantitative Analyses of Variations in the Injury of Endothelial Cells Elicited by 11 Isolates of *Rickettsia rickettsii*." Clin. Diagn. Lab. Immunol. 8 (2001): 788-796. PubMed: 11427428.
3. Burgdorfer, W. and L. P. Brinton. "Mechanisms of Transovarial Infection of Spotted Fever Rickettsiae in Ticks." Ann. N. Y. Acad. Sci. 266 (1975): 61-72. PubMed: 829476.
4. Ereemeeva, M. E., et al. "Genetic Analysis of Isolates of *Rickettsia rickettsii* that Differ in Virulence." Ann. N. Y. Acad. Sci. 990 (2003): 717-722. PubMed: 12860712.

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