



# *Vibrio parahaemolyticus*

## General Information

*Vibrio parahaemolyticus* is a pathogenic motile gram-negative rod-shaped bacterium. *V. parahaemolyticus* is naturally found in salty or brackish waters and causes common foodborne illness that results in gastroenteritis. The human oral infecting dose of *V. parahaemolyticus* ranges from 10<sup>5</sup>–10<sup>7</sup> cells.

## Host Range

Humans, shellfish, fish

## Incubation Period

4-96 hours, with symptoms usually resolving in 3 days.

## Survival Outside Host

*V. parahaemolyticus* thrives in warm and salinated environments; can remain viable during extreme conditions such as cold temperatures (4°C) and food starvation.

## Laboratory Hazards

Ingestion, open wound exposure, parenteral inoculation. Can be transmitted by naturally and experimentally infected organisms.

## Symptoms of Exposure

Watery or bloody diarrhea, vomiting, nausea, fever, abdominal cramps, chills. Can cause wound infection (symptoms include redness, puss, pain, and wound warm to the touch) and septicemia.

## Lab Acquired Infections (LAIs)

At least 2 LAIs: 1972, lab worker subculturing strains of *V. parahaemolyticus* from pure stock; 1999, lab handling of experimentally infected mollusk.

## Personal Protective Equipment



## Disinfection & Inactivation

10-20% bleach, 70% ethanol; is susceptible to low pH, freezing, cooking, and freshwater.

## Waste Management

Refer to [USC's Biological and Infectious Waste Management Plan](#).

## Lab Containment

[Biosafety Level 2 \(BSL-2\)](#) for activities with materials and cultures known or reasonably expected to contain *V. parahaemolyticus*.

## Animal Containment

[Animal Biosafety Level 2 \(ABSL-2\)](#) for activities with experimentally infected animals.

## Medical Surveillance/Treatment

**Surveillance:** Bacterial culture after isolation from source; can be detected by PCR, Kanagawa test, and immunological assays

**Prophylaxis:** None available

**Vaccines:** None available

**Treatment:** Appropriate antibiotic therapy, particularly for wound infections or septicemia. Rehydration is important in the treatment of gastroenteritis.

## Spill Procedures

See [USC Biological Spill Procedures](#)

## Exposure Procedures

See [USC Protocol for Post Exposure Evaluation and Follow-up](#). Use of sharps should be strictly limited.

## References

Biosafety In Microbiological and Biomedical Laboratories (BMBL) 6th Ed., Centers for Disease Control and Prevention, National Institutes of Health

Public Health Agency of Canada (2011) Pathogen Safety Data Sheets: Infectious Substances – *Vibrio parahaemolyticus*. Pathogen Regulation Directorate, Public Health Agency of Canada

Food and Drug Administration. The Bad Bug Book: Handbook of Foodborne Pathogenic Microorganisms and Natural Toxins. [*Vibrio parahaemolyticus*]. 2012

ABSA Laboratory-Acquired Infection (LAI) Database.

<https://my.absa.org/LAI>