

## Dengue Virus Type 4, BC123/97

### Catalog No. NR-3803

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

#### Contributor:

Duane J. Gubler, Sc.D., Director, Division of Vector-Borne Infectious Diseases, National Center for Infectious Disease, Centers for Disease Control and Prevention, Fort Collins, Colorado

#### Product Description:

Virus Classification: *Flavivirus, Flaviviridae*

Species: Dengue virus type 4

Strain/Isolate: BC123/97

Original Source: Dengue virus type 4 (DEN-4), BC123/97 was isolated from a monkey in Malaysia.<sup>1</sup>

Comments: DEN-4, BC123/97 was deposited to BEI Resources by Dr. D. J. Gubler while at CDC, Fort Collins.

Dengue virus causes the most common vector-borne viral disease of humans, with over 50 million cases in tropical and subtropical regions each year.<sup>2</sup> The disease is now endemic in over 110 countries in the world, with Southeast Asia and the Western Pacific being the most seriously affected. Dengue disease is caused by one of four closely related, but antigenically distinct, serotypes (designated DEN-1 to -4).<sup>2</sup> Infections produce a spectrum of clinical illness ranging from a nonspecific viral syndrome to severe and fatal hemorrhagic disease.<sup>3,4</sup> Humans are the major host of dengue virus, with *Aedes aegypti* mosquitoes the principal vectors.

#### Material Provided:

Each vial contains approximately 1 mL of cell lysate and supernatant from *Aedes albopictus* clone C6/36 cells (ATCC<sup>®</sup> CRL-1660<sup>™</sup>) infected with DEN-4, BC123/97.

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

#### Packaging/Storage:

NR-3803 was packaged aseptically in screw-capped plastic cryovials. The product is provided frozen and should be stored at -70°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: *Aedes albopictus* clone C6/36 cells (ATCC<sup>®</sup> CRL-1660<sup>™</sup>)

Growth Medium: Minimum Essential Medium with Earle's salts supplemented with 2% 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: 7 to 10 days at 28°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: Dengue Virus Type 4, BC123/97, NR-3803."

#### 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, 2007; see [www.cdc.gov/od/ohs/biosfty/bmb15/bmb15toc.htm](http://www.cdc.gov/od/ohs/biosfty/bmb15/bmb15toc.htm).

#### Disclaimers:

You are authorized to use this product for research use only. It is not intended for human use.

Use of this product is subject to the terms and conditions of the BEI Resources Material Transfer Agreement (MTA). The MTA is available on our Web site at [www.beiresources.org](http://www.beiresources.org).

While BEI Resources uses reasonable efforts to include accurate and up-to-date information on this product sheet, neither ATCC<sup>®</sup> nor the U.S. Government make any warranties or representations as to its accuracy. Citations from scientific literature and patents are provided for informational purposes only. Neither ATCC<sup>®</sup> nor the U.S. Government warrants that such information has been confirmed to be accurate.

This product is sent with the condition that you are responsible for its safe storage, handling, use and disposal. ATCC<sup>®</sup> and the U.S. Government are not liable for any damages or injuries arising from receipt and/or use of this product. While reasonable effort is made to ensure authenticity and reliability of materials on deposit, the U.S. Government, ATCC<sup>®</sup>, their suppliers and contributors to BEI Resources are not liable for damages arising from the misidentification or misrepresentation of products.

#### Use Restrictions:

**This material is distributed for internal research, non-commercial purposes only.** This material, its product or its derivatives may not be distributed to third parties. Except as performed under a U.S. Government contract, individuals contemplating commercial use of the material, its products or its derivatives must contact the contributor to determine if a license is required. U.S. Government contractors may need a license before first commercial sale.

#### References:

1. Das, S., et al. "Detection and Serotyping of Dengue Virus in Serum Samples by Multiplex Reverse Transcriptase PCR-Ligase Detection Reaction Assay." J. Clin. Microbiol. 46 (2008): 3276-3284. PubMed: 18685000.

2. Holmes, E. C. and S. S. Twiddy. "The Origin, Emergence and Evolutionary Genetics of Dengue Virus." Infect. Genet. Evol. 3 (2003): 19-28. PubMed: 12797969.
3. Malavige, G. N., et al. "Dengue Viral Infections." Postgrad. Med. J. 80 (2004): 588-601. PubMed: 15466994.
4. Kao, C.-L., et al. "Laboratory Diagnosis of Dengue Virus Infection: Current and Future Perspectives in Clinical Diagnosis and Public Health." J. Microbiol. Immunol. Infect. 38 (2005): 5-16. PubMed: 15692621.
5. Ooi, E.-E. and D. J. Gubler. "Dengue in Southeast Asia: Epidemiological Characteristics and Strategic Challenges in Disease Prevention." Cad. Saúde Pública 25 (2009): S115-S124. PubMed: 19287856.
6. Rico-Hesse, R. "Dengue Virus Evolution and Virulence Models." Clin. Infect. Dis. 44 (2007): 1462-1466. PubMed: 17479944.
7. Clyde, K., J. L. Kyle, and E. Harris. "Recent Advances in Deciphering Viral and Host Determinants of Dengue Virus Replication and Pathogenesis." J. Virol. 80 (2006): 11418-11431. PubMed: 16928749.
8. Innis, B. L. and K. H. Eckels. "Progress in Development of a Live-Attenuated, Tetravalent Dengue Virus Vaccine by the United States Army Medical Research and Materiel Command." Am. J. Trop. Med. Hyg. 69 (2003): 1-4. PubMed: 14756126.

ATCC® is a trademark of the American Type Culture Collection.

