

## Usutu Virus, SAAR 1776

### Catalog No. NR-51184

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

#### Contributor:

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#### Manufacturer:

BEI Resources

#### Product Description:

Virus Classification: *Flaviviridae*, *Flavivirus*

Species: Usutu virus

Strain/Isolate: SAAR 1776

Original Source: Usutu virus (USUV), SAAR 1776 was isolated from a mosquito (*Culex univittatus*) in Ndumo, Natal, South Africa in January 1959.<sup>1,2</sup>

Comments: The complete genome of USUV, SAAR 1776 has been sequenced (GenBank: [MF374485](#)).

USUV is an emerging mosquito-borne flavivirus that circulates in several mosquito species and birds, with humans as incidental hosts.<sup>3</sup> It belongs to the Japanese encephalitis virus (JEV) serocomplex and is closely related to West Nile virus, Murray Valley encephalitis virus and JEV.<sup>3</sup> USUV was first discovered in 1959 in South Africa, and has since spread into Europe and is considered endemic in Central and Eastern European regions.<sup>3,4</sup> The first case of human infection in Europe was reported in 2009 when the virus was isolated from the cerebrospinal fluid of an immunocompromised individual suffering from meningoencephalitis.<sup>5</sup> Later, USUV neuroinvasive infection was detected in immunocompetent individuals in Croatia in 2013.<sup>6</sup> Even though the reported cases of human infection are sporadic, there is increased evidence of adaptive mutations for improved fitness of USUV in the human host, requiring a greater need for attention to USUV as a human pathogen moving forward.<sup>4,7</sup>

#### Material Provided:

Each vial contains approximately 1 mL of cell lysate and supernatant from *Cercopithecus aethiops* kidney epithelial cells (Vero E6; ATCC® CRL-1586™) infected with USUV, SAAR 1776.

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

#### Packaging/Storage:

NR-51184 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: *Cercopithecus aethiops* kidney epithelial cells (Vero E6; ATCC® CRL-1586™)

Growth Medium: Eagle's Minimum Essential Medium containing Earle's Balanced Salt Solution, non-essential amino acids, 2 mM L-glutamine, 1 mM sodium pyruvate and 1.5 g/L of sodium bicarbonate supplemented with 2% fetal bovine serum, or equivalent

Infection: Cells should be 70% to 80% confluent

Incubation: 5 to 10 days at 37°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 BEI Resources, NIAID, NIH: Usutu Virus, SAAR 1776, NR-51184."

#### 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/bmbl5/index.htm](http://www.cdc.gov/biosafety/publications/bmbl5/index.htm).

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**References:**

1. Russell, B., Personal Communication.
2. Bakonyi, T., et al. "Complete Genome Analysis and Molecular Characterization of Usutu Virus that Emerged in Austria in 2001: Comparison with the South African Strain SAAR-1776 and Other Flavivirus." *Virology* 328 (2004): 301-310. PubMed: 15464850.
3. Ashraf, U., et al. "Usutu Virus: An Emerging Flavivirus in Europe." *Viruses* 7 (2015): 219-238. PubMed: 25606971.
4. Tetro, J. A. "Is Usutu Virus Ready for Prime Time?" *Microbes Infect.* 19 (2017): 380-381. PubMed: 28619684.
5. Pecorari, M., et al. "First Human Case of Usutu Virus Neuroinvasive Infection, Italy, August-September 2009." *Euro. Surveill.* 14 (2009): 19446. PubMed: 20070936.
6. Santini, M., et al. "First Cases of Human Usutu Virus Neuroinvasive Infection in Croatia, August-September 2013: Clinical and Laboratory Features." *J. Neurovirol.* 21 (2015): 92-97. PubMed: 25361698.
7. Gaibani, P., et al. "Comparative Genomic and Phylogenetic Analysis of the Usutu Virus Isolate from a Human Patient Presenting with Neurological Symptoms." *PLoS One* 8 (2013): e64761. PubMed: 23741387.

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