

Langat Virus, TP21

Catalog No. NR-51658

For research use only. Not for use in humans.

Contributor:

Brandy J. Russell, Centers for Disease Control and Prevention, Division of Vector-Borne Diseases, Arbovirus Reference Collection, Fort Collins, Colorado, USA

Manufacturer:

BEI Resources

Product Description:

Virus Classification: *Flaviviridae*, *Flavivirus*

Species: Langat Virus

Strain/Isolate: TP21

Original Source: Langat virus (LGTV), TP21 was isolated from an *Ixodes granulatus* tick in the Ulu Langat Forest Reserve, Malaysia, on April 17, 1956.¹

Comments: The complete genome of LGTV, TP21 has been sequenced (GenBank: [EU790644](#)).

LGTV are non-segmented positive-sense RNA viruses belonging to tick-borne encephalitis virus (TBEV) serocomplex of the genus *Flavivirus* in the family *Flaviviridae*.² LGTV, TP21 was initially identified as Yelantsev virus in the 1960s and evaluated as a live attenuated vaccine candidate.^{3,4} LGTV are less pathogenic for humans than many other viruses in the TBEV group, such as Central European and Far Eastern tick-borne encephalitis, Kyasanur forest disease, Louping ill, Negishi, Powassan and Omsk hemorrhagic fever viruses.^{2,3,4} Because of this reduced virulence in humans, LGTV, TP21 has been widely investigated as a human vaccine candidate.⁴

Material Provided:

Each vial contains approximately 1 mL of cell lysate and supernatant from *Chlorocebus aethiops* kidney epithelial cells (Vero E6; ATCC® CRL-1586™) infected with LGTV, TP21.

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

Packaging/Storage:

NR-51658 was packaged aseptically in 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: *Chlorocebus 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 80% to 90% confluent

Incubation: 6 to 12 days at 37°C and 5% CO₂

Cytopathic Effect: Cell rounding and sloughing

Citation:

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: Langat Virus, TP21, NR-51658."

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 (BMBL). Current Edition. Washington, DC: U.S. Government Printing Office.

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References:

1. Russell, B. J., Personal Communication.

2. Iacono-Connors, L. C., et al. "Characterization of Langat Virus Antigenic Determinants Defined by Monoclonal Antibodies to E, NS1 and preM, and Identification of a Protective, Non-Neutralizing preM-Specific Monoclonal Antibody." Virus Res. 43 (1996): 125-136. PubMed: 8864202.
3. Pletnev, A. G. and R. Men. "Attenuation of the Langat Tick-Borne Flavivirus by Chimerization with Mosquito-Borne Flavivirus Dengue Type 4." Proc. Natl. Acad. Sci. USA 95 (1998): 1746-1751. PubMed: 9465088.
4. Rumyantsev, A. A., B. R. Murphy and A. G. Pletnev. "A Tick-Borne Langat Virus Mutant that is Temperature Sensitive and Host Range Restricted in Neuroblastoma Cells and Lacks Neuroinvasiveness for Immunodeficient Mice." J. Virol. 80 (2006): 1427-1439. PubMed: 16415020.

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