



Kent Academic Repository

Genova, Cecilia Di, Sutton, Gabrielle, Paillot, Romain, Temperton, Nigel J., Pronost, Stéphane and Scott, Simon D. (2022) *Use of Equine Herpesvirus 1 glycoprotein pseudotyped lentiviral particles for the development of serological tests and assessment of lyophilisation for transport and storage.* In: *Access Microbiology*. 4 (5).

Downloaded from

<https://kar.kent.ac.uk/98158/> The University of Kent's Academic Repository KAR

The version of record is available from

<https://doi.org/10.1099/acmi.ac2021.po0374>

This document version

Publisher pdf

DOI for this version

Licence for this version

CC BY (Attribution)

Additional information

Versions of research works

Versions of Record

If this version is the version of record, it is the same as the published version available on the publisher's web site. Cite as the published version.

Author Accepted Manuscripts

If this document is identified as the Author Accepted Manuscript it is the version after peer review but before type setting, copy editing or publisher branding. Cite as Surname, Initial. (Year) 'Title of article'. To be published in *Title of Journal*, Volume and issue numbers [peer-reviewed accepted version]. Available at: DOI or URL (Accessed: date).

Enquiries

If you have questions about this document contact ResearchSupport@kent.ac.uk. Please include the URL of the record in KAR. If you believe that your, or a third party's rights have been compromised through this document please see our [Take Down policy](https://www.kent.ac.uk/guides/kar-the-kent-academic-repository#policies) (available from <https://www.kent.ac.uk/guides/kar-the-kent-academic-repository#policies>).



ACCESS MICROBIOLOGY

an open research platform

Volume 4, Issue 5

Use of Equine Herpesvirus 1 glycoprotein pseudotyped lentiviral particles for the development of serological tests and assessment of lyophilisation for transport and storage

Cecilia Di Genova¹, Gabrielle Sutton^{2,4}, Romain Paillot³, Nigel Temperton¹, Stéphane Pronost^{2,4}, Simon D Scott¹

 [View Affiliations](#)

Published: 27 May 2022

Equine herpesviruses (EHVs) are enveloped DNA viruses predominantly infecting members of the Equidae family. EHVs primarily cause respiratory disease, however EHV-1 can produce cases of a neurological disease, abortion and neonatal death. Thus, these viruses represent a welfare issue for the equine industry and scientific focus for researchers. EHV-1 exhibits a complex array of 12 glycoproteins on its surface envelope, but it is unclear precisely which are important for virus cell entry and the role of each in host immune response. In order to investigate the contribution of these glycoproteins, pseudotype viruses (PVs) could provide a useful study tool. We have successfully generated functional EHV-1 pseudotyped lentiviruses bearing four glycoproteins, gB, gD, gH and gL (sequences derived from an aborted foetus during a large EHV1 outbreak strain in Normandy, France). PVs were employed in a pseudotype virus neutralisation test (PVNT) to measure levels of specific neutralising antibodies serum samples (n=52) taken longitudinally from experimentally infected ponies, compared with uninfected controls.

PVs routinely require -80°C for long term storage and a dry ice cold-chain during transport which can impede dissemination and utilisation in other laboratories. Consequently, we further investigated whether freeze-drying (lyophilisation) of EHV-1 PV could address this issue. PVs were lyophilised and pellets either reconstituted immediately or stored under various temperature conditions, sampling at different timepoints. The recovery and functionality of these lyophilised PVs was compared with standard frozen aliquots in titration and neutralisation tests.

[PDF](#)

[Help](#)

Published Online: 27/05/2022

© 2022 The Authors

This is an open-access article distributed under the terms of the Creative Commons Attribution License.

Most read this month

Co-infection of SARS-CoV-2 with other respiratory pathogens in patients with liver disease

Jasmine Samal, Reshu Agarwal, Anushka Soni, Amit Pandey, Shalini Thapar and Ekta Gupta

Case Report: *Vibrio fluvialis* isolated from a wound infection after a piercing trauma in the Baltic Sea

Juliane Hecht, Maria Borowiak, Bernhard Fortmeier, Salah Dikou, Wolfgang Gierer, Ingo Klempien, Jonas Nekat, Stephan Schaefer and Eckhard Strauch

***Ralstonia mannitolilytica*: an emerging multidrug-resistant opportunistic pathogen in a tertiary care hospital setting**

Tasneem Siddiqui, Sangram Singh Patel, Richa Sinha, Ujjala Ghoshal and Chinmoy Sahu

Detection of *Enterococcus avium* in a case of urinary tract infection and haematuria

Abdelrhman Abo-Zed, Shaymaa Hegazy and Tung Phan

Draft genome sequences of *Pseudomonas amygdali* pv. *loropetali* pathotype strain DSM 105780^{PT}, isolated from Florida

Apekshya Parajuli, Carrie L. Harmon, Gerald V. Minsavage, Debra D. Jones, Sujan Timilsina, Mathews L. Paret and Jeffrey B. Jones

Most cited this month



Antibacterial activity of high-dose nitric oxide against pulmonary *Mycobacterium abscessus* disease

Kristijan Bogdanovski, Trisha Chau, Chevalia J. Robinson, Sandra D. MacDonald, Ann M. Peterson, Christine M. Mashek, Windy A. Wallin, Mark Rimkus, Frederick Montgomery, Joas Lucas da Silva, Shashank Gupta, Abdi Ghaffari, Adrian M. Zelazny and Kenneth N. Olivier

Growth and metabolic characterization of four lactic acid bacteria species isolated from rice beer prepared in Assam, India

Arup Jyoti Das, Manas Jyoti Das, Tatsuro Miyaji and Sankar Chandra Deka

PDF

Help

Photodynamic antimicrobial chemotherapy coupled with the use of the photosensitizers methylene blue and temoporfin as a potential novel treatment for *Staphylococcus aureus* in burn infections

Alistair Hampden-Martin, Jo Fothergill, Mohamed El Mohtadi, Lucy Chambers, Anthony J. Slate, Kathryn A. Whitehead and Kayvan Shokrollahi

***Ruminococcus gnavus* bacteraemia in a patient with multiple haematological malignancies**

Caroline Gren, Malene Roed Spiegelhauer, Emelie Curovic Rotbain, Boje Kvorning Ehmsen, Peter Kampmann and Leif Percival Andersen

Biosynthesis of silver nanoparticles using baker's yeast, *Saccharomyces cerevisiae* and its antibacterial activities

Ifeyomi Olobayotan and Bukola Akin-Osanaiye

+ More



PDF

Help