Title: <!–<query id="Q2">Your article is registered as a regular item and is being processed for inclusion in a regular issue of the journal. If this is NOT correct and your article belongs to a Special Issue/Collection please contact k.marker@elsevier.com immediately prior to returning your corrections.</query>–>Virome definition in cerebrospinal fluid of patients with neurological complications after hematopoietic stem cell transplantation

Authors: C. Pou, M. Barrientos-Somarribas, S. Marin-Juan, G. Bogdanovic, A. Bjerkner, T. Allander, B. Gustafsson, B. Andersson

PII: S1386-6532(18)30249-X
DOI: https://doi.org/10.1016/j.jcv.2018.09.014
Reference: JCV 4062

To appear in: *Journal of Clinical Virology*

Received date: 29-5-2018
Revised date: 6-9-2018
Accepted date: 18-9-2018

Please cite this article as: Pou C, Barrientos-Somarribas M, Marin-Juan S, Bogdanovic G, Bjerkner A, Allander T, Gustafsson B, Andersson B, Virome definition in cerebrospinal fluid of patients with neurological complications after hematopoietic stem cell transplantation, *Journal of Clinical Virology* (2018), https://doi.org/10.1016/j.jcv.2018.09.014

Virome Definition in Cerebrospinal Fluid of Patients with Neurological Complications after Hematopoietic Stem Cell Transplantation

Running title: Virome definition in CSF after HSCT

C Pou[1], M Barrientos-Somarribas[1*], S Marin-Juan[2*], G Bogdanovic[3,4], A Bjerkner[3,4] T Allander[3,4], B Gustafsson[2#], B Andersson[1#]

[1]*Department of Cell and Molecular Biology, Karolinska Institutet, SE-171 77 Stockholm, Sweden*
[2]*Department of Clinical Science, Intervention and Technology, CLINTEC, Karolinska Institutet, S-141 86 Stockholm, Sweden*
[3]*Department of Microbiology, Tumor and Cell Biology, Karolinska Institutet, SE-171 77 Stockholm, Sweden*
[4]*Department of Clinical Microbiology, Karolinska University Hospital, SE-171 76 Stockholm, Sweden*

[*]These authors contributed equally to this work.

[#]These senior authors contributed equally to this work and are both corresponding authors.

HIGHLIGHTS

- Unbiased NGS is a suitable approach for virome definition in complex clinical specimens.
- A significant number of TTV-like sequences was detected in subjects with neurological complications after HSCT, later confirmed with qTTV-PCR.
- Higher genetic diversity (distinct genotypes) was also present in patients than controls.

ABSTRACT

Background:

Neurological complications (NC) in allogeneic hematopoietic stem cell transplant (HSCT) recipients lead to long-term sequelae and result in significant morbidity and mortality. Since risk factors for NC include viral infection or reactivation, virome inspection after HSCT might be helpful to the clinical management of patients after HSCT.

Objectives and study design:

In this study we investigated whether any viruses are found in association with NC after HSCT. For this purpose, unbiased NGS was used to characterize nucleic acid contents in cerebrospinal fluid (CSF) taken at time of NC in 35 HSCT patients. Virome definition in CSF from non-transplanted subjects (controls) was also tested to define the commensal flora.

Results and conclusions: