
Workshop Rodent-Borne Diseases

Who is the reservoir of Monkeypox? Work in progress

Anne Laudisoit¹, Erik Verheyen², Mare Geearerts³, Tosca Van Roy³, Pascal Baelo⁴, Guy Crispin Gembu⁴

¹Ecohealth Alliance, New York, USA & University of Antwerp, Belgium, herwig.leirs@uantwerpen.be

²Royal Belgian Institute of Natural Sciences, Brussels, and University of Antwerp, Belgium

³University of Antwerp, Belgium

⁴Centre de Surveillance de la Biodiversité, Kisangani University, Democratic Republic of the Congo

Human Monkeypox is a disease that is known from central and west Africa and that is caused by the Monkeypox virus, an Orthopoxvirus. It is a zoonosis with symptoms similar to smallpox and increasing frequency of human-to-human transmission in central Africa. Two separate clades of the virus exist: the Congo basin clade with a mortality of about 15% and the west African clade that causes a milder disease. Human cases were frequently seen during localized outbreaks in DR Congo but in the last 12 months epidemics have been reported from Nigeria (where Monkeypox had not been reported since 1978), Central African Republic and Liberia. In none of these cases, the source of the virus or what caused the (re-)emergence of the disease was known. The natural reservoir is still unknown (despite the name, it is not primates) but an introduction of Monkeypox to the USA in 2003 was linked to the import of *Cricetomys gambianus* and *Graphiurus* sp. from Ghana. Also squirrels are often mentioned as potential hosts. Intensive field work in DRC, in areas where Monkeypox is endemic in humans but also in areas where it has not been reported, has yielded a number of sequences from different species of small mammals (rodents, shrews, bats, carnivores, ...) that showed traces of Orthopoxvirus DNA. Overall prevalence was between 10 and 20 percent. Yet no species stood out as one in which the infection is more common and the genetic distances between the observed viral material were not related to the phylogeny of the host. Similarly, a wide array of mammals have proven seropositive without pointing to a particular host species. Our screening work is currently continuing and by the time of the conference we hope to present more detailed results and to suggest working hypotheses for further research.

4 5 9

Julius-Kühn-Archiv

Jens Jacob, Jana Eccard (Editors)

6th International Conference of Rodent
Biology and Management
and
16th Rodens et Spatium

Potsdam, Germany, 3-7 September 2018

Book of Abstracts



Julius Kühn-Institut
Bundesforschungsinstitut für Kulturpflanzen

4 5 9

Julius-Kühn-Archiv

Jens Jacob, Jana Eccard (Editors)

6th International Conference of Rodent
Biology and Management
and
16th Rodens et Spatium

Potsdam, Germany, 3-7 September 2018

Book of Abstracts



Editors:

Jens Jacob¹ and Jana Eccard²

¹Julius Kühn Institute, Federal Research Centre for Cultivated Plants,
Institute for Plant Protection in Horticulture and Forests, Vertebrate Research,
Toppeideweg 88, 48161 Münster, Germany

²University of Potsdam, Institute of Biochemistry and Biology,
Animal Ecology Group, Maulbeerallee 1,
14469 Potsdam, Germany

Local Organizing Committee:

Jana Eccard, University of Potsdam

Jens Jacob, Julius Kühn Institute, Federal Research Centre for Cultivated Plants, Münster

Daniela Reil, Julius Kühn Institute, Federal Research Centre for Cultivated Plants, Münster

Christiane Scheffler, University of Potsdam

Elke Seydewitz, University of Potsdam

Scientific organising committee:

Emil Tkadlec (Czech Republic); Frauke Ecke (Sweden); Grant Singleton (Philippines); Heikki Henttonen (Finland); Jana Eccard (Germany); Jens Jacob (Germany); Lyn Hinds (Australia); Prince Kaleme (Congo); Xavier Lambin (UK); Zhibin Zhang (China)

International Steering Committee Rodens et Spatium:

Abraham Haim (Israel); Alexey Surov (Russia); Ana Maria Benedek (Romania); Boris Krasnov (Israel);

Emil Tkadlec (Czech Republic); Éric Le Boulengé (Belgium); Farida Khammar (Algeria);

František Sedláček (Czech Republic); Gert Olsson (Sweden); Grant Singleton (Australia);

Heikki Henttonen (Finland); Jan Zima (Czech Republic); Jean-François Cosson (France); Linas Balčiauskas

(Lithuania); Maria da Luz Mathias (Portugal); Molly McDonough (USA); Mustafa Sözen (Turkey);

Nigel Yoccoz (Norway); Olga Osipova (Russia); Takuya Shimada (Japan); Victor Sánchez Cordero (Mexico);

Xavier Lambin (United Kingdom); Yasmina Dahmani (Algeria)

International Steering Committee**International Conference of Rodent Biology and Management:**

Andrea Byrom (New Zealand); Charley Krebs (Canada); Grant Singleton (Philippines); Jens Jacob (Germany);

Jiqi Lu (China); Lyn Hinds (Australia); Nico Avenant (South Africa); Peter Banks (Australia);

Peter Brown (Australia); Regino Cavia (Argentina); Rhodes Makundi (Tanzania); Roger Pech (New Zealand);

Steven Belmain (UK); Sudarmaji (Indonesia); Zhibin Zhang (China)

Bibliografische Information der Deutschen Nationalbibliothek

Die Deutsche Nationalbibliothek verzeichnet diese Publikation

In der Deutschen Nationalbibliografie: detaillierte bibliografische

Daten sind im Internet über <http://dnb.d-nb.de> abrufbar.

ISSN 1868-9892

ISBN 978-3-95547-059-3

DOI 10.5073/jka.2018.459.000



Alle Beiträge im Julius-Kühn-Archiv sind unter einer
Creative Commons - Namensnennung - Weitergabe unter gleichen Bedingungen -
4.0 Lizenz veröffentlicht.

Printed in Germany by Arno Brynda GmbH, Berlin.