



Universiteit
Leiden
The Netherlands

Targeting chikungunya virus replication : insights into chikungunya virus replication and the antiviral activity of suramin in vitro

Albulescu, I.C.

Citation

Albulescu, I. C. (2019, November 27). *Targeting chikungunya virus replication : insights into chikungunya virus replication and the antiviral activity of suramin in vitro*. Retrieved from <https://hdl.handle.net/1887/80955>

Version: Publisher's Version

License: [Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden](#)

Downloaded from: <https://hdl.handle.net/1887/80955>

Note: To cite this publication please use the final published version (if applicable).

Cover Page



Universiteit Leiden



The handle <http://hdl.handle.net/1887/80955> holds various files of this Leiden University dissertation.

Author: Albuлесcu, I.C.

Title: Targeting chikungunya virus replication : insights into chikungunya virus replication and the antiviral activity of suramin in vitro

Issue Date: 2019-11-27

Curriculum Vitae

Irina Cristina Albulescu (née Florea), was born on December 25th 1985, in Petroșani, Hunedoara county, Romania. She attended the National College “Mihai Viteazul” in Ploiesti, Prahova County, between 2000-2004, and graduated with a chemistry-biology profile. She continued with her Bachelor studies in Biochemistry (2004-2008) at the University of Bucharest, followed by a Master program in Biochemistry and Molecular Biology (2008-2010) at the same university. From December 2007, Irina began working at the Institute of Cellular Biology and Pathology (ICBP), under the supervision of Dr. Dorin Alexandru, and later of Dr. Anca Gafencu and Dr. Adrian Manea, where she also performed her Bachelor’s and Master’s thesis projects. During the four years spent at the ICBP, she was promoted from research assistant to scientific researcher.

In 2012, she moved to the Netherlands and volunteered as a scientist in the lab of Dr. Frank van Kuppeveld at Nijmegen Center for Molecular Life Sciences (NCMLS). Soon after, she obtained a PhD studentship in the lab of Dr. Eric Snijder at the Leiden University Medical Center (LUMC), under the direct supervision of Dr. Martijn van Hemert. In addition, she was also an early stage researcher (2012-2015) in the European Initial Training Network EUVIRNA. Her research was focused on host factors involved in the replication of alphaviruses and identification of compounds with antiviral activity. As part of her PhD research project, Irina performed an industrial training stage at Janssen Infectious Diseases in Beerse (Belgium), under the supervision of Dr. Florence Herschke. Between October 2016 and June 2018, she was involved in the EU-funded ZIKAlliance project, still under the supervision of Dr. Martijn van Hemert, working on the characterization of a ZIKV clinical isolate and the identification of antiviral compounds targeting ZIKV. From July 2018 until January 2019 she continued to work at the LUMC under the direct supervision of Dr. Marjolein Kikkert on the EU-funded Zoonoses Anticipation and Preparedness Initiative (ZAPI) project, which concerned the development of a yellow fever virus 17D-based vaccine platform.

In May 2019, Irina has re-joined the group of Dr. Frank van Kuppeveld at the Faculty of Veterinary Medicine in Utrecht and is now involved in the development of vaccination strategies that provide broad protection against antigenically variable pathogens.

List of Publications

Pietilä MK, **Albulescu IC**, Hemert MJV, Ahola T. Polyprotein Processing as a Determinant for *in vitro* Activity of Semliki Forest Virus Replicase. *Viruses*. 2017 Oct; 9(10).

Hwu JR, Gupta NK, Tsay SC, Huang WC, **Albulescu IC**, Kovacicova K, van Hemert MJ. Bis(benzofuran thiazolidinone)s and bis(benzofuran-thiazinanone)s as inhibiting agents for chikungunya virus. *Antiviral Res*. 2017 Oct; 146:96-101.

van Boheemen S, Tas A, Anvar SY, van Grootveld R, **Albulescu IC**, Bauer MP, Feltkamp MC, Bredenbeek PJ, van Hemert MJ. Quasispecies composition and evolution of a typical Zika virus clinical isolate from Suriname. *Sci Rep*. 2017 May; 7(1):2368.

Albulescu IC, Kovacicova K, Tas A, Snijder EJ, van Hemert MJ. Suramin inhibits Zika virus replication by interfering with virus attachment and release of infectious particles. *Antiviral Res*. 2017 Jul; 143:230-236.

Delang L, Li C, Tas A, Quérat G, **Albulescu IC**, De Burghgraeve T, Guerrero NA, Gigante A, Piorkowski G, Decroly E, Jochmans D, Canard B, Snijder EJ, Pérez-Pérez MJ, van Hemert MJ, Coutard B, Leyssen P, Neyts J. The viral capping enzyme nsP1: a novel target for the inhibition of chikungunya virus infection. *Sci Rep*. 2016 Aug; 6:31819.

Hoornweg TE, van Duijl-Richter MKS, Ayala Nuñez NV, **Albulescu IC**, van Hemert MJ, Smit JM. Dynamics of Chikungunya Virus Cell Entry Unraveled by Single-Virus Tracking in Living Cells. *J Virol*. 2016 Apr; 90(9):4745-4756.

Albulescu IC, van Hoolwerff M, Wolters LA, Bottaro E, Nastruzzi C, Yang SC, Tsay SC, Hwu JR, Snijder EJ, van Hemert MJ. Suramin inhibits chikungunya virus replication through multiple mechanisms. *Antiviral Res*. 2015 Sep; 121:39-46.

Manea A, Manea SA, Todirita A, **Albulescu IC**, Raicu M, Sasson S, Simionescu M. High-glucose-increased expression and activation of NADPH oxidase in human vascular smooth muscle cells is mediated by 4-hydroxynonenal-activated PPAR α and PPAR β/δ . *Cell Tissue Res*. 2015 Aug; 361(2):593-604.

Scholte FE, Tas A, **Albulescu IC**, Žusinaite E, Merits A, Snijder EJ, van Hemert MJ. Stress granule components G3BP1 and G3BP2 play a proviral role early in Chikungunya virus replication. *J Virol*. 2015 Apr; 89(8):4457-69.

Albulescu IC*, Tas A*, Scholte FE, Snijder EJ, van Hemert MJ. An *in vitro* assay to study chikungunya virus RNA synthesis and the mode of action of inhibitors. J Gen Virol. 2014 Dec; 95(Pt 12):2683-92. *Joint first authorship.

Olagnier D, Scholte FE, Chiang C, **Albulescu IC**, Nichols C, He Z, Lin R, Snijder EJ, van Hemert MJ, Hiscott J. Inhibition of dengue and chikungunya virus infections by RIG-I-mediated type I interferon-independent stimulation of the innate antiviral response. J Virol. 2014 Apr; 88(8):4180-94.

Trusca VG, **Florea IC**, Kardassis D, Gafencu AV. STAT1 interacts with RXR α to upregulate ApoCII gene expression in macrophages. PLoS One. 2012; 7(7):e40463.

Manea A, Manea SA, **Florea IC**, Luca CM, Raicu M. Positive regulation of NADPH oxidase 5 by proinflammatory-related mechanisms in human aortic smooth muscle cells. Free Radic Biol Med. 2012 May; 52(9):1497-507.

Fenyo IM, **Florea IC**, Raicu M, Manea A. Tyrphostin AG490 reduces NADPH oxidase activity and expression in the aorta of hypercholesterolemic apolipoprotein E-deficient mice. Vascul Pharmacol. 2011 Mar-Jun; 54(3-6):100-6.

Trusca VG, Fuior EV, **Florea IC**, Kardassis D, Simionescu M, Gafencu AV. Macrophage-specific up-regulation of apolipoprotein E gene expression by STAT1 is achieved via long range genomic interactions. J Biol Chem. 2011 Apr; 286(16):13891-904.

+

ERRATA SHEET

This errata sheet lists oversights for the doctoral thesis of Irina Cristina Albulescu, titled “Targeting alphavirus replication – Insights into the chikungunya virus replication and the antiviral activity of suramin *in vitro*”, Leiden University Medical Center, 2019, ISBN 97894-93184-16-9 (printed and pdf).

| Location | Oversight |
|--------------------|---|
| Page 11, Figure 1 | Missing the citation of “the creative commons license, as CC-BY-SA 4.0 https://creativecommons.org/licenses/by-sa/4.0/ ” |
| Page 14. Figure 3 | Missing the text “Copyright Massachusetts Medical Society”, after “adapted from [2]”. |
| Page 18, Figure 4 | Missing the citation of “the creative commons license, as CC-BY-SA 4.0 https://creativecommons.org/licenses/by-sa/4.0/ ” |
| Page 122, Figure 1 | Missing the citation of “Adapted from Adapted from https://talk.ictvonline.org/ictv-reports/ictv_online_report/positive-sense-rna-viruses/w/ <i>Togaviridae</i> , under the creative commons license, as CC-BY-SA 4.0 https://creativecommons.org/licenses/by-sa/4.0/ ” |