

Accepted Manuscript

Title: A structural view of the RNA-dependent RNA polymerases from the *Flavivirus* genus

Authors: Guoliang Lu, Peng Gong



PII: S0168-1702(16)30718-3

DOI: <http://dx.doi.org/doi:10.1016/j.virusres.2017.01.020>

Reference: VIRUS 97063

To appear in: *Virus Research*

Received date: 4-11-2016

Revised date: 15-1-2017

Accepted date: 22-1-2017

Please cite this article as: Lu, Guoliang, Gong, Peng, A structural view of the RNA-dependent RNA polymerases from the *Flavivirus* genus. *Virus Research* <http://dx.doi.org/10.1016/j.virusres.2017.01.020>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Review

A structural view of the RNA-dependent RNA polymerases from the *Flavivirus* genus

Guoliang Lu ¹ and Peng Gong ^{1,*}

¹ Key Laboratory of Special Pathogens and Biosafety, Wuhan Institute of Virology, Chinese Academy of Sciences, No. 44 Xiao Hong Shan, Wuhan, Hubei, China.

* Author to whom correspondence should be addressed. E-Mail: gongpeng@wh.iov.cn.

Highlights

- A structural overview of the flavivirus RNA-dependent RNA polymerases (RdRPs).
- The flavivirus RdRP global architecture and elements related to polymerase function.
- The flavivirus RdRP autoregulation by its natural fusion partner methyltransferase.
- Characteristic features in conformational dynamics in flavivirus RdRPs.

Abstract:

The RNA-dependent RNA polymerase (RdRP) from the *Flavivirus* genus is naturally fused to a methyltransferase (MTase), and the full-length protein is named nonstructural protein 5 (NS5). Similar to other polymerases from other RNA viruses, the flavivirus RdRP has an encircled human right hand architecture with palm, fingers, and thumb domains surrounding its polymerase active site. In contrast to primer-dependent RdRPs that have a spacious front channel to accommodate the template-product RNA duplex, the flavivirus RdRP has a priming element as a thumb domain insertion, partially occupying the front channel to facilitate the *de novo* initiation process. Seven catalytic motifs A through G

Download English Version:

<https://daneshyari.com/en/article/5675399>

Download Persian Version:

<https://daneshyari.com/article/5675399>

[Daneshyari.com](https://daneshyari.com)