



Antiviral activity evaluation of siRNAs against MERS-CoV in Vero cell culture.

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Abstract:

The Middle East respiratory syndrome Coronavirus (MERS-CoV) is a novel human coronavirus causing respiratory syndrome since April 2012 [1]. The replication of MERS-CoV is mediated by Orf 1ab and viral gene activity can be modulated by RNAi approach. The main objective of this work to evaluate the antiviral activity of siRNAs in cell culture. To design the siRNAs, we have selected orf1ab gene of MERS-CoV genome and used online software [2]. The designed siRNAs were chemically synthesized commercially by IDT. The antiviral activity of six siRNAs were evaluated and presented in this study at various concentrations (0.2-100nm) in Vero cells. In this study, total of twenty-one potential, functional, off-target reduced siRNA were *Insilico* designed, selected and chemically synthesized. The antiviral activity of siRNAs was evaluated by Realtime PCR. The CT value of all six siRNAs were obtained from both supernatant and cell lysate. The siRNA-3 and siRNA-4 were observed to be better antiviral activity as compared to control sample. Based on results obtained in this study, it is concluded that the selection protocols, accuracy and strength of designed siRNA are very helpful to minimize the possible cytotoxic effects of siRNA in Vero cells. The selected siRNAs provided promising results that make them good candidates for further evaluation of their anti-MERS-CoV activity in another cell line. The results obtained from this study are very helpful to evaluate the remaining siRNAs in other cell cultures and further to study their inhibition of virus replication in multiple cell cultures.

Biography:

Dr. S. S. Sohrab is a Research Scientist by profession and



works at Special Infectious Agents Unit, King Fahd Medical Research Center, King Abdulaziz University, Jeddah, Saudi Arabia. He holds a PhD in Bioscience. Sohrab has 13 years Research Experience in Molecular Virology. He has published more than 65 papers and presented many abstracts in National and International conferences.

Recent Publications:

1. Dr. Sayed Sartaj Sohrab, et al; Genetic diversity of MERS-CoV spike protein gene in Saudi Arabia; 2019
2. Dr. Sayed Sartaj Sohrab, et al; Genetic diversity of begomoviruses infecting tomato plant in Saudi Arabia; 2019
3. Dr. Sayed Sartaj Sohrab, et al; Molecular diagnosis of begomovirus associated with yellow vein mosaic disease of *Urena lobata*; 2019
4. Dr. Sayed Sartaj Sohrab, et al; Plant-based fabrication of silver nanoparticles and their application; 2019
5. Dr. Sayed Sartaj Sohrab, et al; Plant-Based Fabrication of Silver Nanoparticles and Their Application; 2019

New Frontier's in Applied and Environmental Microbiology; April 24, 2020; London, UK

Citation: Sayed Sartaj Sohrab; Antiviral activity evaluation of siRNAs against MERS-CoV in Vero cell culture; Applied Microbiology 2020; April 24, 2020; London, UK