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Selected bioflavonoids and their activity against Chikungunya virus *in vitro* replication

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The mosquito-borne Chikungunya virus (CHIKV) causes Chikungunya fever with clinical presentations such as severe back and small joint pain and debilitating arthritis associated with crippling pains that persist for weeks and even years. Although there are several studies to evaluate the efficacy of drugs against CHIKV, the treatment for Chikungunya fever is mainly symptom-based and no effective licensed vaccine or antiviral are available. Here, we investigated the antiviral activity of three types of flavonoids against CHIKV *in vitro* replication. Three compounds: Silymarin, quercetin and kaempferol were evaluated for their *in vitro* antiviral activities against CHIKV using a CHIKV replicon cell line and a clinical isolate of CHIKV of the Central/East African genotype. A cytopathic effect inhibition assay was used to determine their activities on CHIKV viral replication and quantitative reverse transcription PCR was used to calculate virus yield. Antiviral activity of the compounds was further investigated by evaluation of CHIKV protein expression using western blotting for CHIKV nsP1, nsP3, E1 proteins. Silymarin exhibited significant antiviral activity against CHIKV reducing both replication efficiency and down-regulating production of viral proteins involved in replication. This study may have important consequence for broaden the chance of getting the effective antiviral for CHIKV infection.

Biography

Keivan Zandi has completed his PhD in Medical Virology from Tarbiat Modarres University, Iran. He is currently working as an Associate Professor in Department of Medical Microbiology, University Malaya. He has published more than 60 research papers in various scientific journals and has several Patents to his credit. He is actively severing as an Editorial Board Member for *Scientific Reports* with Nature publishing group as well as several other journals such as *International Journal of Virology*, *SM tropical Medicine Journal*, *International Journal of Pharmacology*, *American journal of Drug Discovery and development* and *International Journal of Drug Discovery and Biotechnology journal*.

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