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## Scutellaria baicalensis as a natural candidate to develop the antiviral drug for dengue viruses

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**S** *Cutellaria baicalensis* is one of the most widely used medicinal plants, and is officially listed in the Chinese Pharmacopoeia. In the present study, we evaluated the *in vitro* antiviral activity of aqueous extract of the roots of *S. baicalensis* against all the four dengue virus (DENV) serotypes. Foci forming unit reduction assay (FFURA) and quantitative real-time polymerase chain reaction (qRT-PCR) assay were used to determine the antiviral activity of the extract. Indeed, the presence of baicalein, a flavonoid with known anti-dengue properties was determined by mass spectrometry. The IC<sub>50</sub> values for the *S. baicalensis* extract on Vero cells following DENV internalization ranged from 86.59 to 95.19 µg/mL for different serotypes. The IC<sub>50</sub> values decreased to 56.02 to 77.41 µg/mL when cells were treated with the extract at the time of virus adsorption for the different DENV serotypes. However, the extract showed potent virucidal activity against free DENV particles with IC<sub>50</sub> that ranged from 74.33 to 95.83 µg/mL for all DENV serotypes. The concentration of baicalein in the *S. baicalensis* extract was ~1% (1.03 µg/gm dried extract). Our study showed the *in vitro* anti-dengue virus replication property of *S. baicalensis* against all the four DENV serotypes investigated. The extract reduced DENV infectivity and replication in Vero cells. The extract was rich in baicalein, and could be considered for potential development of anti-DENV therapeutics.

## **Biography**

Keivan Zandi has completed his PhD at the age of 29 years from Tarbiat Modarres University, Tehran, Iran. He is currently working as an associate professor in Department of Medical Microbiology, Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia. He has published more than 40 papers in different scientific journals. He is actively serving several scientific journals as an editorial board member.

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