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## Fluoroquinolones: Anti-HCV drugs of the future?

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HCV is responsible for about 200 million infections worldwide. The current therapy against HCV has numerous adverse effects, and is too costly for developing countries. In the present study, we assessed the efficacy of fluoroquinolone group of drugs against HCV helicase enzyme NS3, using in vitro and in silico approaches. For in vitro analysis, purified NS3 protein was used in helicase assays to assess the inhibitory effect of fluoroquinolones. Drugs that showed strong inhibition of NS3 were docked onto the NS3 protein using computer simulation. In vitro experimental analysis showed that several fluoroquinolones strongly inhibited the helicase activity of NS3. Docking analysis established that each of these drugs interacted strongly with different amino acids in the active site of NS3. This study will provide the basis for designing new fluoroquinolones derivatives that have the combined properties of pre-existing drugs, and hence a higher potency against HCV.

## **Biography**

Syed Ali has obtained his MA and PhD from State University of New York, Buffalo, NY, USA, and completed his post-doctoral fellowship from Harvard Medical School. He is currently an Associate Professor at Aga Khan University, Karachi, Pakistan, Adjunct Professor at Dow University of Health Sciences, Karachi, Pakistan, and Visiting Professor at University of Karachi, Karachi, Pakistan. To date, Dr. Ali has published over 40 publications in Cancer and Virology journals, with a cumulative impact factor of over 250. He is currently serving on seven editorial/review boards for journals and grant funding agencies. To his credit, he also has a patent for a method for manufacturing a device that measures the activity of DNA/RNA modifying enzymes. Dr. Ali's research interests include Clinical and Basic themes in Virology and Cancer Biology; Molecular Epidemiology and pathogenesis of Human Papilloma virus, Human Immunodeficiency virus, and Hepatitis C virus. In addition, his group is screening drugs for use against certain human DNA and RNA viruses.

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