

## **Dengue virus requires the unsaturated fatty acid biosynthesis pathway for its infection in the mammalian host**

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### **Abstract**

Dengue virus (DENV) infection is a significant global health concern with over 40% of the world's population at risk and currently no therapeutics or vaccines available. Understanding host viral interactions is key to developing novel therapeutic options. Dengue virus is a positive sense RNA virus that induces the formation of invaginations in the endoplasmic reticulum to replicate its genome. Increased phospholipid biosynthesis is key to the formation of these replication compartments as well as viral maturation and release. It is now evident that viral proteins mediate this change in the cellular phospholipid repertoire, but the precise mechanisms are unknown. We have shown that siRNA mediated knockdown as well as pharmacological inhibition of key enzymes in the unsaturated phospholipid biosynthesis pathway reduces DENV replication. Unsaturated fatty acids, when incorporated into membrane phospholipids are a key mechanism for providing fluidity and curvature of membranes enhancing the assembly and function of membrane bound enzymes.

### **Keywords:**