

Abstract Submitted  
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**Activities of the Chemical Molecules of Vaccines and Bug Repellants: Applications in Computational and Physical Chemistry** RICHARD KYUNG, SANGEUN YEOM, Choice Research Group — Currently there is no cure or treatment for Zika virus, but researchers are working on potential vaccines, with some ready for human trials. Meanwhile, an important prevention method is to prohibit mosquitoes from maturing into biting adults through application of adulticides, larvicides, and repellents. For this reason, this paper conducted a computational simulations for the activities and stabilities of the chemical molecules used in vaccines and bug repellants. The Zika virus is just one example of a vector-borne disease. Although preventable, vector-borne diseases make up 17percent of infectious diseases and account for more than one million deaths per year (WHO). Ongoing research is crucial to eradicate all vector-borne diseases. This particular paper examines chemical molecules used in vaccines and bug repellants. The research presents the optimum structure of molecules involved in immunization therapies for Zika Virus. Through Avogadro and other computer programs, this research seeks safe and efficient stereo-chemical forms of Deltamethrin, Methoprene, and other molecules.

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