

Dengue-2 Core

Recombinant Dengue-2 Core

VAG0135

Product Overview

Name	Dengue-2 Core
Description	Recombinant Dengue-2 Core

Background

Dengue fever is a mosquito-borne viral disease caused by the four serotypes of Dengue virus (DENV-1 to DENV-4). With an estimated 390 million infections occurring annually, dengue fever poses a significant global health burden, particularly in tropical and subtropical regions. The DENV core protein is a vital component of the viral particle, playing a crucial role in viral assembly and genome packaging. Understanding the structural and functional characteristics of the DENV-2 core protein is essential for unraveling the viral assembly process and identifying potential targets for antiviral intervention. This research aims to characterize the DENV-2 core protein in its recombinant form to gain insights into its role in viral replication and explore potential strategies for combating dengue fever. The primary objective of this study is to express and purify recombinant DENV-2 core protein using various expression systems. Recombinant DNA techniques will be employed to construct expression vectors containing the DENV-2 core gene, followed by expression in bacterial, yeast, or mammalian cell-based systems. The recombinant core protein will be purified using affinity chromatography or other suitable methods, enabling subsequent biochemical and biophysical characterization. The second objective is to investigate the assembly and structural properties of the DENV-2 core protein. In vitro assays will be conducted to analyze the ability of the purified core protein to self-assemble into oligomeric structures resembling the viral nucleocapsid. Techniques such as electron microscopy and atomic force microscopy will be utilized to determine the morphology and organization of the assembled structures. Furthermore, the interactions between the core protein and other viral and host factors will be explored using protein-protein interaction assays. The third objective is to identify potential antiviral targets within the DENV-2 core protein. Structural studies, including X-ray crystallography or cryo-electron microscopy, will be employed to elucidate the three-dimensional structure of the recombinant core protein. This structural information will provide valuable insights into the protein's functional domains and potential druggable sites, guiding the development of novel antiviral compounds targeting the DENV-2 core protein. By characterizing the DENV-2 core protein in its recombinant form, this research aims to deepen our understanding of the assembly process and structural properties of the virus, facilitating the identification of novel antiviral targets. The findings from this study may contribute to the development of effective therapeutic strategies against dengue fever, ultimately reducing the global impact of this mosquito-borne viral disease.