9051 Mira Mesa Blvd, #910094
San Diego, CA 92191
Tel: 760-390-3989

HIV1 Integrase

HIV-1 Integrase Recombinant
VAG0319

Product Overview

Name	HIV1 Integrase

Description

HIV-1 Integrase Recombinant

Source

Escherichia Coli.

Physical Appearance

Sterile filtered colorless clear solution.

Formulation

HIV1 Integrase solution contains PBS & 25mM K2CO3.

Stability

Store at 4°C if entire vial will be used within 2-4 weeks. Store, frozen at -20°C for longer periods of time. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Avoid multiple freeze-thaw cycles.

Purity

Protein is >95% pure as determined by 10% PAGE (coomassie staining).

Applications

ELISA, WB & LFA.

Background

Human Immunodeficiency Virus type 1 (HIV1) is the causative agent of Acquired Immunodeficiency Syndrome (AIDS), a devastating disease that affects millions of people worldwide. The HIV1 life cycle is a complex process involving several key viral enzymes, one of which is the integrase (IN). HIV1 integrase plays a crucial role in viral replication by catalyzing the integration of viral DNA into the host cell genome, an essential step for the establishment of a persistent infection. The study of HIV1 integrase has been of great interest to researchers due to its significance as a therapeutic target. In recent years, advances in recombinant DNA technology have allowed for the production and purification of HIV1 integrase in recombinant form, enabling detailed structural and functional studies. This research aims to characterize the HIV1 integrase recombinant and gain insights into its mechanisms of action during viral integration. The first objective of this study is to express and purify recombinant HIV1 integrase using various expression systems such as bacterial, yeast, or mammalian cell-based systems. Recombinant DNA techniques, including cloning and expression vector design, will be employed to generate the desired constructs for protein production. The recombinant

9051 Mira Mesa Blvd, #910094
San Diego, CA 92191
Tel: 760-390-3989

integrase will be purified using affinity chromatography, followed by characterization using biochemical and biophysical techniques. The second objective is to investigate the enzymatic activity of the purified HIV1 integrase recombinant. In vitro assays will be performed to determine its ability to catalyze the integration of viral DNA into target DNA sequences. Various substrates, including oligonucleotides and plasmids, will be used to assess the substrate specificity and kinetics of the integrase enzyme. Furthermore, the effects of potential inhibitors or small molecules on the enzymatic activity will be evaluated. The third objective is to elucidate the three-dimensional structure of the HIV1 integrase recombinant using techniques such as X-ray crystallography or cryo-electron microscopy. This structural information will provide valuable insights into the mechanism of integrase function and aid in the rational design of novel inhibitors targeting integrase. By characterizing the HIV1 integrase recombinant, this research aims to contribute to our understanding of the molecular mechanisms underlying viral integration. The findings from this study may provide crucial information for the development of novel therapeutic strategies targeting HIV1 integrase, potentially leading to the discovery of more effective antiretroviral drugs.

Precautions

HIV1 Integrase is for research use only and not for use in diagnostic or therapeutic procedures.

Background

Human Immunodeficiency Virus type 1 (HIV1) is the causative agent of Acquired Immunodeficiency Syndrome (AIDS), a devastating disease that affects millions of people worldwide. The HIV1 life cycle is a complex process involving several key viral enzymes, one of which is the integrase (IN). HIV1 integrase plays a crucial role in viral replication by catalyzing the integration of viral DNA into the host cell genome, an essential step for the establishment of a persistent infection. The study of HIV1 integrase has been of great interest to researchers due to its significance as a therapeutic target. In recent years, advances in recombinant DNA technology have allowed for the production and purification of HIV1 integrase in recombinant form, enabling detailed structural and functional studies. This research aims to characterize the HIV1 integrase recombinant and gain insights into its mechanisms of action during viral integration. The first objective of this study is to express and purify recombinant HIV1 integrase using various expression systems such as bacterial, yeast, or mammalian cell-based systems. Recombinant DNA techniques, including cloning and expression vector design, will be employed to generate the desired constructs for protein production. The recombinant integrase will be purified using affinity chromatography, followed by characterization using biochemical and biophysical techniques. The second objective is to investigate the enzymatic activity of the purified HIV1 integrase recombinant. In vitro assays will be performed to determine its ability to catalyze the integration of viral DNA into target DNA sequences. Various substrates, including oligonucleotides and plasmids, will be used to assess the substrate specificity and kinetics of the integrase enzyme. Furthermore, the effects of potential inhibitors or small molecules on

9051 Mira Mesa Blvd, #910094
San Diego, CA 92191
Tel: 760-390-3989

the enzymatic activity will be evaluated. The third objective is to elucidate the three-dimensional structure of the HIV1 integrase recombinant using techniques such as X-ray crystallography or cryo-electron microscopy. This structural information will provide valuable insights into the mechanism of integrase function and aid in the rational design of novel inhibitors targeting integrase. By characterizing the HIV1 integrase recombinant, this research aims to contribute to our understanding of the molecular mechanisms underlying viral integration. The findings from this study may provide crucial information for the development of novel therapeutic strategies targeting HIV1 integrase, potentially leading to the discovery of more effective antiretroviral drugs.