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GCV

Ganciclovir
NTP0032

Product Overview

Name	GCV

Description

Ganciclovir

Introduction

Ganciclovir (GCV) is a pro-drug nucleoside analog that is activated by phosphorylation. It is useful in the study of gene therapy in cancer research. Ganciclovir is a synthetic analogue of 2'-deoxy-guanosine. It is initially phosphorylated to a deoxyguanosine triphosphate (dGTP) analogue. This mechanism competitively inhibits the integration of dGTP by viral DNA polymerase, resulting in the termination of elongation of viral DNA. Upon expression of a viral suicide gene encoding thymidine kinase, the non-toxic pro-drug is converted to a phosphorylated active analog and is incorporated into the DNA of replicating eukaryotic cells, causing death of the malignant dividing cell. The cell cycle is irreversibly arrested at the G2-M checkpoint. Gap junction involvement in the ganciclovir bystander effect has been studied. Ganciclovir has been used to study loss of telomeres and to evaluate sensitivity of viruses to antiviral treatments. Ganciclovir is used in molecular biology for selection against random recombination events when homologous recombination of a gene of interest is required.

Physical Appearance

Sterile Filtered White lyophilized (freeze-dried) powder.

Stability

Lyophilized Ganciclovir although stable at room temperature for 3 weeks, should be stored at 4°C.

Purity

Greater than 99.0%.

Solubility

It is recommended to reconstitute the lyophilized Ganciclovir in sterile 18MΩ-cm H2O not less than 100 µg/ml, which can then be further diluted to other aqueous solutions.

Precautions

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