HIV Integrase Inhibitors Do Not Exert A Post-Antibiotic Effect Despite Slow Dissociation From IN-DNA Complexes In Vitro

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Introduction

- Post-antibiotic effect (PAE) is a unique concept in bacterial growth noted for some antibacterials, e.g., erythromycin, when drug concentrations fall below the minimum inhibitory concentration (MIC) but are still above the minimum bactericidal concentration (MBC).

- In H. pylori, PAE is observed with clarithromycin, but not with amoxicillin, which is bactericidal at concentrations of 10 μg/mL or greater.

- Inhibition of bacteria during the PAE period results in a reduction in bacterial counts below those observed in controls.

- Many reports on PAE in bacteria are limited to isolated examination of post-antibiotic effects.

Methods

Background

- The HIV-1 integrase (IN), a target for antiretroviral therapy, is acquired during early infection by HIV-1-infected target cells.

- IN is bound by IN during the primary infection and is released from the viral DNA during the viral reverse transcription and integration stages.

- Once released, IN is free to activate transcription and integration.

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