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GLOBAL DYNAMICS OF AN IN-HOST HIV-1 INFECTION MODEL WITH LATENTLY INFECTED CELLS

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Abstract

The dynamics of an in-host HIV-1 infection model with latently infected cells is studied. Using Lyapunov functions, we derive that the global dynamics of the system is completely determined by the basic reproduction number, if the basic reproduction is less than one, then the infection free equilibrium of the system is globally asymptotically stable, if the basic reproduction is greater than one, then the infection equilibrium of the system is globally asymptotically stable. The numerical simulations confirm our analysis.

Keywords and phrases: an in-host HIV-1 infection model, latently infected cells, global stability, Lyapunov functional.

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