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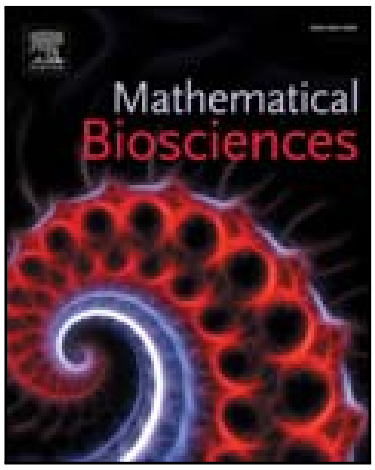

Mathematical Modeling of HIV-like Particle Assembly in Vitro

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Highlights

- A dynamical model is developed to study HIV-like particle (HLP) assembly *in vitro*.
- The existence and uniqueness of the positive equilibrium solution for this model with 79 nonlinear equations are proved.
- Geometry parameters values are computed with few calculations by six-fold symmetry.
- Three important parameters influence the concentration variation rates of all intermediates before equilibrium and at equilibrium.
- The relationship between the initial concentration of building blocks and concentrations of all intermediates is analyzed.
- Bounds of concentrations of free hexamers and HLP are estimated.

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