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Keng Deng* (deng@louisiana.edu), Department of Mathematics, University of Louisiana at Lafayette, Lafayette, LA 70504-1010. *Asymptotic behavior for a cellular replication and maturation model.*

We consider a nonlocal first order partial differential equation with time delay that models simultaneous cell replication and maturation processes. We establish a comparison principle and construct monotone sequences to show the existence and uniqueness of the solution to the equation. We then analyze the asymptotic behavior of the solution via upper-lower solution technique. (Received September 17, 2007)