1051-39-69   **Ferhan M. Atici*** (`ferhan.atici@wku.edu`), Department of Mathematics, Western Kentucky University, Bowling Green, KY 42101-3576, and **Paul W. Eloe** (`paul.eloe@notes.udayton.edu`), Department of Mathematics, University of Dayton, Dayton, OH 45469-2316. *An Application of Discrete Fractional Difference Equations in Biology.*

A direct generalization of the discrete exponential function $(\frac{1}{1-a})^t$ will be defined and named as the discrete Mittag-Leffer function. This function will allow us to solve a first order nabla fractional difference equation with an initial condition. As an application, a compartmental model which explains how the concentration of a drug in blood plasma declines over time will be discussed. (Received August 12, 2009)