1161-39-100 **Ferhan M. Atici***, Department of Matehmatics, Western Kentucky University, 1906 College Heights Blvd., Bowling Green, KY 42101, **Ngoc Nguyen**, Department of Mathematics, 1906 College Heights Blvd., Bowling Green, KY 42101, **Kamala Dadashova** (kamala.dadashova642@topper.wku.edu), Department of Mathematics, Western Kentucky University, Bowling Green, KY 42101, **Sarah Pedersen** (sarah.pedersen122@topper.wku.edu), Gatton Academy of Science and Mathematics, Western Kentucky University, Bowling Green, KY 42101, and **Gilbert Koch** (gilbert.koch@ukbb.ch), Pediatric Clinical Pharmacology, University Children's Hospital, Basel, Switzerland. *Pharmacokinetics and Pharmacodynamics Models of Tumor Growth and Anticancer Effects in Discrete Time.*

We study the h-discrete and h-discrete fractional representation of a pharmacokinetics-pharmacodynamics (PK-PD) model describing tumor growth and anticancer effects in continuous time considering a time scale $h\mathbb{N}_0$, where $h > 0$. Since the measurements of the drug concentration in plasma were taken hourly, we consider $h = 1/24$ and obtain the model in discrete time (i.e. hourly). We then continue with fractionalizing the h-discrete nabla operator in the h-discrete model to obtain the model as a system of nabla h-fractional difference equations. In order to solve the fractional h-discrete system analytically, we state and prove some theorems in the theory of discrete fractional calculus. We compare residual squared sum values of the newly introduced models in discrete time with the existing models in continuous time in one table. (Received August 12, 2020)