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## Numerical solution for the chemotaxis model by finite difference method

(Conference Paper) [\(Open Access\)](#)Messikh, C.<sup>a</sup>, Chowdhury, M.S.H.<sup>b</sup>, Guesmia, A.<sup>c</sup>, Mawa, S.<sup>d</sup>, Okhunov, A.<sup>b</sup>, Aznam, S.M.<sup>b</sup> <sup>a</sup>Badji Mokhtar University, Faculty of Sciences, Department of Mathemathic, Annaba, 23000, Algeria<sup>b</sup>Department of Science in Engineering, Faculty of Engineering, International Islamic University Malaysia, Jalan Gombak, Kuala Lumpur, 53100, Malaysia<sup>c</sup>University Skikda, Algeria.University of 20 August 1955, Faculty of Sciences, Department of Mathemathic, Skikda, 21000, Algeria[View additional affiliations](#) ▾

## Abstract

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The finite difference method for discretization space fractional chemotaxis model is introduced in this study. The space fractional chemotaxis system is obtained from the classical advection-diffusion equations of the chemotaxis system by replacing the spatial derivative with a generalized derivative of fractional order. We compare the numerical solution of finite difference method and exact solution for a test example. The results reveal that the finite difference method is very simple and efficient for solving space fractional chemotaxis system. © Published under licence by IOP Publishing Ltd.

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