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Zhenbu Zhang* (zhenbu.zhang@jsums.edu), Department of Mathematics, P.O.Box 17610, Jackson State University, Jackson, MS 39217. *Global behavior of a system modelling chemotaxis*. Preliminary report.

In this paper we consider a reaction-diffusion system modelling chemotaxis, which describes the situation of two species of bacteria competing for the same nutrient. We assume that both competing species have the same consumption rates of the substrate, but they have different diffusion rates and chemotaxis coefficients. We use Moser-Alikakos iteration to prove the global existence of the solution. We also study the existence of steady state solutions and their stability. (Received June 29, 2005)