Nagai, Toshitaka; **Senba, Takasi**; **Yoshida, Kiyoshi**

Application of the Trudinger-Moser inequality to a parabolic system of chemotaxis. (English)

Zbl 0901.35104
Funkc. Ekvacioj, Ser. Int. 40, No. 3, 411-433 (1997).

The Keller-Segel system (KS), a mathematical model describing aggregation of cellular slime models, is studied. In particular, the time global existence and L^∞ estimate of the solution of (KS) in a bounded domain $\Omega \subset \mathbb{R}^2$ with smooth boundary $\partial\Omega$ is examined by using the Trudinger-Moser inequality extended to the Sobolev space $W^{1,p}(\Omega)$.

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MSC:

35Q80 Applications of PDE in areas other than physics (MSC2000)
46N20 Applications of functional analysis to differential and integral equations

Keywords:

Keller-Segel system; aggregation of cellular slime models; global existence; Trudinger-Moser inequality