1011-35-86   **Huiqiang Jiang*** (`hqjiang@math.umn.edu`), 127 Vincent Hall, 206 Church St. S.E., Minneapolis, MN 55455, and **Wei-Ming Ni**. *Global existence and a priori estimates of Gierer-Meinhardt system.*

Gierer-Meinhardt system

$$\begin{cases} u_t = d_1 \triangle u - u + \frac{u^p}{v^q} + \sigma & \text{in} \quad \Omega \times [0, \infty), \\ \tau v_t = d_2 \triangle v - v + \frac{u^r}{v^s} & \text{in} \quad \Omega \times [0, \infty) \end{cases}$$

is used to model biological pattern formation, where $\tau, d_1, d_2 > 0$, $\sigma \geq 0$ and p, q, r, s are nonnegative constants satisfying

$$0 < \frac{p-1}{r} < \frac{q}{s+1}.$$

In this talk, I will present a global existence result of the initial value problem with Neumann boundary cndition. A priori estimates of the Gierer-Meinhardt system and its stationary solutions will also be discussed in various settings. (Received August 16, 2005)