

Activation of B-cells by spatial reorganization

BOGDAN KAZMIERCZAK¹ AND TOMASZ LIPNIACKI²

^{1,2}Institute of Fundamental Technical Research Polish Academy of Sciences

¹`bkazmier@ippt.gov.pl`

We present a system of reaction-diffusion equations modeling the phenomenon of B-cell activation. The basic idea of the model is the positive feedback between the kinase and the receptors.

We show that clusterization of a small fraction of B-cell receptors can lead to its activation. Likewise the displacement of the B-cell nucleus toward the cell membrane, can also induce its activation.

The local activation propagates then as a travelling wave close to the surface of the cell membrane.